THE IRON AGE

A Review of the Hardware, Iron, Mac[illegible] Trades.

Published every Thursday Morning by David Williams Co., 232-238 [illegible]liam St., New York.

Vol. 73: No. 17. *New York, Thursday, April 28, 1904.*

$5.00 a Year, including Postage. Single Copies, 15 Cents.

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See Page 24.

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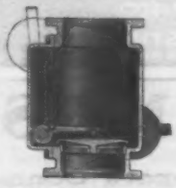

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THE AMERICAN TUBE & STAMPING COMPANY
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The Locomotive of To-Day. Reprinted with revisions and additions from the "Locomotive Magazine." Second edition. 8vo. Cloth. 200 pages, 37 illustrations. 16 half-tone plates. London, 1903.....$1.00
For sale by David Williams Co., 232 William St., N.Y.

THE IRON AGE

THURSDAY, APRIL 28, 1904.

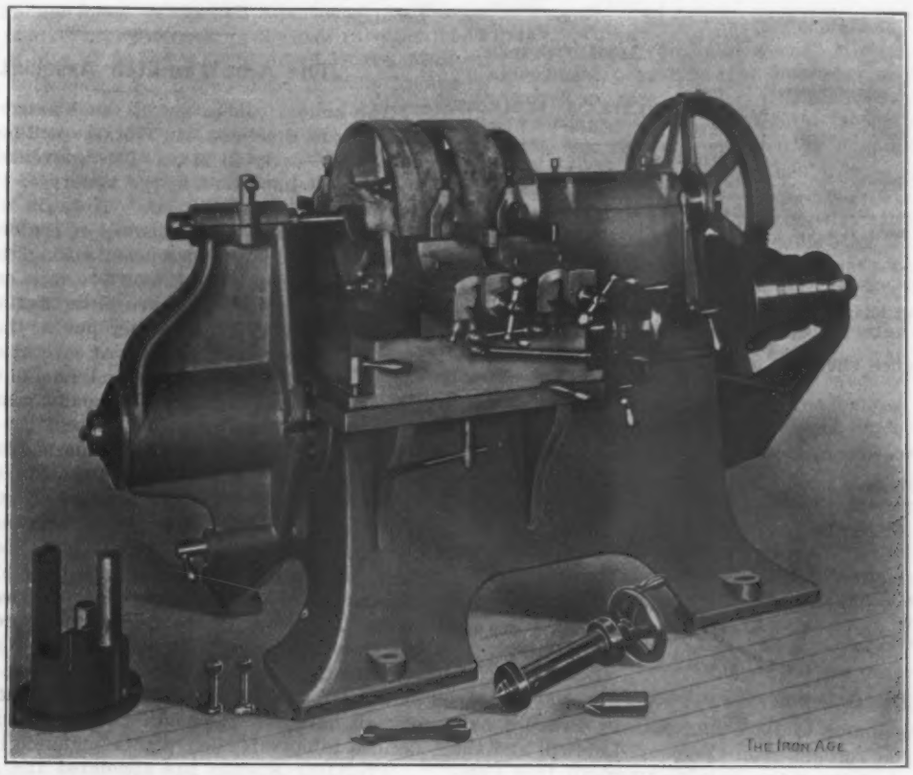
The Streit 20-Inch Pulley Lathe.

The lathe illustrated herewith is designed for turning pulleys, fly wheels, gear blanks, &c., and, as will be seen from the cut, will handle two pulleys or fly wheels at the same time. In all there are four tool slides or rests, two mounted on either side and feeding in opposite directions. The rails and table are one casting, which swivels in the center on the bed. A series of holes are drilled through a flange at the end of the table in such a manner that by inserting a pin to project into corresponding holes in the table different tapers may be turned. Other tapers can be secured by using the clamps to hold the table. When setting the table the lever shown in the front of the cut is used, and by this means both rails are set simultaneously with the effect of saving time.

In turning pulleys an arbor is used which fits in the head spindle and has a bearing in the tail stock spindle. A heavy tail stock is furnished, to which is fitted an engine lathe tail stock spindle and center, which can be quickly removed and replaced with the special spindle that is used when turning pulleys. When placing a pulley in the lathe the tail stock is swung to one side and the pulley slipped onto the arbor from the front; the tail stock is then swung back into position and centered with a pin at the bottom. Three arbors are all that is necessary for this lathe when turning pulleys. For the intermediate sizes bushings are used, which are turned one or two thousandths taper; these are tapped into the hub with the hand only and are easily removed. The bushings are held in position by a split collar on either side, and can be made of anything that will bore to the size of the arbor and turn to the size of the bore of the work. This method effects a great saving in outlay for arbors, as the bushings are inexpensive. One arbor and a set of fittings are furnished with each machine.

Where the work is light enough for one man to lift he can place it in the machine without assistance. The feed is all geared, and can be changed from the finest to the coarsest instantly. The best record which has been made on this machine was the finishing of 60 20 x 5½ inch pulleys in ten hours, three cuts being taken on each without crowding.

The lathe is supplied either with a plain light tail stock, plain gearing 24 to 1 and single tool slides, or with heavy combination tail stock, heavy back gearing 37 to 1 and four tool slides. Compound rests may be had in place of the single tool slides. It is built by the A. Streit Machine Company, Cincinnati, Ohio, in sizes of from 20 to 50 inches, all of which are equipped with a screw cutting attachment for chasing elevator drums and similar work.



A 20-INCH LATHE FOR TURNING PULLEYS, FLY WHEELS AND GEAR BLANKS.

In the summer of 1903 the Indian Government directed Neville Priestly of the Indian Railway Department to make inspection of American railroads. Mr. Priestly's report has now been issued by the English Government in the shape of a blue book. The comments on American railroads are highly complimentary. Mr. Priestly makes clear the fact that the keynote of American railroad organization is the utmost possible freedom of initiative for the individual official, combined with strict responsibility.

The Board of Directors of the Pittsburgh Stock Exchange have not yet finally decided to admit the warrants of the American Pig Iron Storage Warrant Company to dealings. Should warrants be listed the dealings would be restricted to Southern irons. About 15 years ago an effort was made to trade in pig iron warrants on the old Pittsburgh Board, but beyond changing the official title of the exchange by inserting the word "Metal" nothing came of the movement.

The Pennsylvania Steel Company's Report.

The stockholders of the Pennsylvania Steel Company held their annual meeting at Camden, N. J., on April 19, re-elected W. D. Winsor, George Wood, E. T. Stotesbury, George F. Baer and Theodore N. Ely, the directors whose terms were expiring, and approved the annual report. The directors met later in the day and re-elected the old officers. The following financial statement was submitted for the year ended December 31, 1903, compared with the two preceding years:

	1903.	1902.	1901.
Net	$3,380,434	$3,690,864	$2,879,272
Other income	329,607	274,187	323,559
Total net	$3,710,041	$3,965,051	$3,202,831
Interest	864,997	671,431	550,143
Adj. interest	143,633	.....	.....
Balance	$2,701,410	$3,293,617	$2,652,718
Depreciation	512,313	820,085	491,212
Surplus	$2,189,097	$2,473,532	$2,161,506

The profit and loss account as of April 9, 1904, compares as follows:

	April 9, 1904.	April 9, 1903.	April 10. 1902.
Dividends from operating companies, miscellaneous income	$1,530,461	$1,212,336	$1,215,063
Expenses	30,458	28,937	30,581
Net	$1,500,003	$1,183,399	$1,184,482
Preferred dividends	1,155,000	1,201,930	1,152,956
Surplus	$345,003	*$18,531	$31,526
Previous balance	626,254	.....	.....
Total	$971,257	.....	.....
Adj. of values	347,215	.....	.....
Profit and loss, surplus.	$624,042	.....	.....

* Deficit.

The balance sheet as of April 7, 1904, compares as follows:

	1904.	1903.	1902.
Assets.			
Cast	$1,027,400	$660,787	$680,787
Loans	930,000	605,000	266,606
Stocks and bonds	25,913,010	26,610,466	26,911,650
Accounts received, accrued interest	3,631	.....	.....
Totals	$27,874,042	$27,876,253	$27,859,025
Liabilities.			
Preferred stock	$16,500,000	$16,500,000	$16,500,000
Common stock	10,750,000	10,750,000	10,750,000
Profit and loss	624,042	626,255	609,025
Totals	$27,874,042	$27,876,253	$27,859,025

President E. C. Felton says in part:

At the beginning of 1903 this company owned a half interest in the Juragua Iron Company, Limited, and the entire capital stock of the Spanish-American Iron Company. On November 1, 1903, the term of the limited partnership having expired, the Juragua Iron Company, Limited, was liquidated, so that this company is now interested in only one mining operation in the Island of Cuba, namely, the Spanish-American Iron Company. The two properties produced during the year 1903, 555,524 tons of iron ore, a decrease of about 20,000 tons over the previous year.

Neither the Pennsylvania Steel Company of Pennsylvania nor the Maryland Steel Company was operated to its full capacity throughout the year 1903. During the first three months of the year the inability of the railroad companies to transport the necessary supplies of fuel and other materials rendered operating to full capacity an impossibility. For five or six months in the middle of the year the plants were run at a very satisfactory rate of production, while during the latter part of the year, owing to the sudden falling off in the demand for steel products, the output was again of necessity curtailed. The plants produced in 1903 715,000 tons of pig iron and 837,000 tons of steel, against 625,000 tons of pig iron and 802,000 tons of steel in 1902. While the output for 1903 will thus be seen to have been larger than that of the year previous, the increased cost of fuel and railroad freights caused the profits to be less than those for the preceding year.

The new bridge shop was a large producer, and among other pieces of work completed the Williamsburg suspension bridge, between the cities of New York and Brooklyn, the largest structure of its kind in the world.

The Maryland Steel Company completed and put in operation 200 by-product coke ovens, which are now producing about 1000 tons of coke per day.

The amount charged to general depreciation is believed to be conservative and liberal; in addition to this amount there have been spent and charged to cost of manufacture $507,920 for permanent improvements or as special depreciation of particular departments. The amounts charged to general and special depreciation are in addition to the sums spent upon the plants for ordinary repairs and maintenance.

During the year the subsidiary companies have made expenditures for additions and improvements and charged the same to capital account, as follows: The Pennsylvania Steel Company, $792,515.85; the Maryland Steel Company, $623,362; the Spanish-American Iron Company, $112,313; a total of $1,528,191, charged to capital account.

The only important improvement at present in contemplation of the works of either of the subsidiary companies is the completion of the by-product coke oven plant at Lebanon.

The Amalgamated Association.

The annual convention of the Amalgamated Association of Iron, Steel and Tin Workers will be held in Cleveland, Ohio, early in May. This convention will be one of the most important in the history of the association, and in more ways than one. To begin with, it may be stated that never in the history of the organization has there been as much dissension among the members as there is at the present time. The men employed in the sheet and tin plate mills are bitter against the officials for forcing upon them, as they put it, the recent reduction of 18 per cent. in wages. At several of the tin plate plants, notably the Laughlin and La Belle works of the American Sheet & Tin Plate Company, some of the Amalgamated men have refused to accept the reduction and these plants are closed. The same is true of the large independent plate plant of the Pope Tin Plate Company at Steubenville, Ohio. A determined effort is to be made to defeat President Shaffer for re-election.

During the year the association has lost a number of sheet and tin plate mills, and it is probable will lose additional mills after July 1, when the present scale expires. A number of the leading independent sheet and tin plate companies that have signed the Amalgamated scale in the past have become very tired of the actions of the association and of the apparent little control the officials have over the men. These companies have about decided to operate their plants nonunion in the future.

President Shaffer has appointed the following delegates to act on the Wage Committee, and they will meet at the American House, Cleveland, Ohio, on April 29: P. J. McArdle, Muncie, Ind.; William Jenkins, Anniston, Ala.; Benjamin F. Jones, McKees Rocks, Pa.; Fred. Wilder, Terre Haute, Ind.; Joseph Rutledge, New Albany, Ind.; William J. Brown, Greenville, Pa.; John Price, Youngstown, Ohio; William M. Gibson, Pittsburgh, Pa.; William Eagan, Covington, Ky.; Albert Rock, East Chicago, Ind.; Richard Fitzgerald, Greenville, Pa.; Thomas Williams, Vincennes, Ind.; John Nestor, Youngstown, Ohio; P. H. McGowan, Birmingham, Ala.; Llewellyn Lewis, Martin's Ferry, Ohio; Charles Brown, Piqua, Ohio; Andrew R. Black, Struthers, Ohio; R. R. Williams, Niles, Ohio; Richard Lynch, Martin's Ferry, Ohio; Otto Sellers, Muncie, Ind.; William Boss, Newport, Ky.; Zake Lones, New Castle, Pa.; John Kersey, Granite City, Ill.; T. J. Collins, Connellsville, Pa.; Thomas L. Williams, Martin's Ferry, Ohio; William McDonald, Elwood, Ind.; John G. Jones, New Castle, Pa.; Fred. Sloan, Granite City, Ill.

The Pittsburgh Construction Company have a large force of men at work on the train shed of the Wabash Railroad in Pittsburgh. It is expected this train shed will be completed about June 1, and that the first train over the Wabash Railroad will be run into Pittsburgh about June 15.

Westinghouse Specifications for Cast Iron Pulleys.

The purchasing department of the Westinghouse Electric & Mfg. Company Pittsburgh, has recently issued the following specifications under which the company will buy cast iron pulleys:

Rim.—Allowable variation in diameter over crown plus or minus one-half of 1 per cent. Allowable variation in width of face plus or minus ¼ inch for pulleys up to and including 10-inch face. Plus or minus ½ inch for pulleys over 10-inch face. Must be machined on periphery and edges. Face must be crowned from ⅛ to 1-16 inch per foot unless otherwise specified. Highest point of crown must be within ¼ inch of center of face.

Bore.—All bores must be reamed. Diameter of bore must be such that a gauge 0.002 inch small will go through. United States standard plug gauge must not enter more than one-quarter of its diameter at the largest end of the hub. The bore must be straight its entire length and true. The hub of the pulley may be chambered one-quarter of its length.

Hub.—The hub must be central with face to within ¼ inch unless otherwise specified. Allowable variation in length of hub plus or minus ¼ inch for all length. Must be faced on both ends. Set screws must be "cup" point United States standard threads. (For all ½-inch screws use 13 threads per inch.) Set screws must fit well, be radial and over center of keyway one at each end.

Keyway.—Allowable variation in width of keyway plus 1-1000 inch or minus 2-1000 inch. Depth at small end plus or minus 1-100 inch. Depth given in all cases for small end of keyway. Must be cut radial with square corners. Sides of keyway to be parallel with bore. Bottom of keyway must be tapered ⅛ inch per foot.

Balancing.—All pulleys must be accurately balanced.

Design.—Pulleys 8 inches in diameter or less to have web instead of arms. Pulleys whose relative dimensions in regard to diameter and face are in accordance with those given in the following schedule are to have single arms. In all other instances the practice of the manufacturer in regard to double arms shall prevail:

9 inches	diameter up to	8 inches face.
10 inches	diameter up to	9 inches face.
11 inches	diameter up to	12 inches face.
12 inches	diameter up to	10 inches face.
13 inches	diameter up to	14 inches face.
14 inches	diameter up to	10 inches face.
15 inches	diameter up to	12 inches face.
16 inches	diameter up to	12 inches face.
17 inches	diameter up to	12 inches face.
18 inches	diameter up to	12 inches face.
19 inches	diameter up to	12 inches face.
20 inches	diameter up to	11 inches face.
21 inches	diameter up to	14 inches face.
23 inches	diameter up to	14 inches face.
25 inches	diameter up to	15 inches face.
26 inches	diameter up to	16 inches face.
27 inches	diameter up to	16 inches face.
30 inches	diameter up to	16 inches face.
31 inches	diameter up to	18 inches face.
32 inches	diameter up to	18 inches face.
36 inches	diameter up to	18 inches face.

Up to 12 inches diameter the thickness of rim at edge to be 3-16 inch minimum to 5-16 inch maximum. From 12 to 24 inches in diameter, ¼ inch minimum to ⅜ inch maximum. From 24 to 36 inches, ⅜ inch minimum to ½ inch maximum. On all other sizes the practice of the manufacturer in this regard shall prevail.

Inspection.—Every facility for careful inspection, including static balance check tests, shall be given our inspector free of charge when requested. Pulleys to be inspected at place of manufacture must not be painted until they have passed inspection.

Guarantee.—Pulleys shall be of symmetrical design, of ample strength, free from blow holes and guaranteed to run 1 mile per minute peripheral speed except when otherwise specified. Pulleys must bear manufacturer's mark of identification.

Rejection.—The company reserve the right to reject any portion or all of the material which does not conform to the above specification in every particular, and to return the rejected material to the manufacturer or seller for full credit at price charged, f.o.b. point of delivery specified by the purchaser. If the material is to be replaced, a new order will be entered at prices, terms and conditions acceptable to the purchaser.

The Merchant Marine Commission Bill.

WASHINGTON, D. C., April 26, 1904.—The House of Representatives on the 23d inst. debated and passed the bill providing for the appointment of a commission to investigate the condition of the American merchant marine and to recommend such legislation as might be deemed desirable for its rehabilitation. The measure had been reported several weeks before with a favorable recommendation from the Committee on the Merchant Marine and Fisheries, after a series of hearings given to prominent representatives of shipbuilding and ship owning interests.

When the vote was taken on the bill an amendment was adopted on the motion of Representative Livernash of California, instructing the commission to inquire as to "what change or changes, if any, should be made in existing laws relating to the treatment, comfort and safety of seamen in order to make more effective the seafaring calling in the American merchant marine."

Representative Lucking of Michigan offered an amendment providing that "no plan or policy shall be reported or recommended which involves the payments of subsidies or bounties from the treasury of the United States, but this was rejected by a vote of 136 to 124. The previous question was then ordered on the bill, and it was passed by 144 yeas to 118 nays, a majority of 26. The bill now goes to the Senate, where it has been favorably reported, and it is probable that it will be passed before the adjournment of the present session. W. L. C.

The United States Steel Corporation as a Ghost.—Two incidents have occurred recently which indicate that the United States Steel Corporation may be a very convenient ghost to conjure up. The story is told that some time since very effective use was made by parties interested in large Mexican steel enterprises of an article published in a New York financial journal. The corporation were represented as eagerly conspiring to defeat a movement to put a tariff on steel rails in Mexico. The article fell into the hands of the great man of our sister republic and swept away all doubts as to the necessity for ample protection to the young steel industry of that country. Last week the Legislature of Ontario was discussing the question of advancing $2,000,000 to the ill fated Lake Superior Company. Here, too, the Machiavellian tactics of the Steel Corporation were revealed, and the desire to defeat their sinister designs had its influence in rallying supporters to the cause of home industry.

Structural Steel Car Company's Plant to be Sold.—The works of the Structural Steel Car Company at Canton, Ohio, which have been idle for some time, are advertised to be sold at forced sale this week. The company several years ago built a plant at Canton. One of the buildings is 78 feet wide by 506 feet long, and others included boiler and power houses, paint shops and office buildings. The total amount invested in these structures was over $96,000, and then machinery and equipment costing over $71,000 was added. Their money then gave out and at the same time the slump began in the financial market, which made it impossible to complete the works or to pay interest on the investment thus far made. It is understood that there are some interests inclined to bid for the buildings and remove them to some other locality.

The shipbuilders on the great lakes are looking with interest at the plans of the Canadian Government to enlarge the Welland Canal. The extreme length of vessel permitted at the present time by the canal to pass between Lakes Erie and Ontario is 255 feet. With the Welland Canal locks enlarged to twice that size, or even 100 feet longer than present dimensions, lake built boats with a carrying capacity of 5000 tons or over could readily get to the coast.

The Blake-Knowles Multicurrent Feed Water Heater.

To obtain the best results from a feed water heater it is necessary to avoid stagnant conditions, and this is most surely accomplished when the direction of the flow of the steam, as well as that of the water, is changed within the heater. In the Blake multicurrent heater the positive circulation of the steam is arranged for in the manner indicated in Figs. 2 and 3, both parts of which are transverse sections taken at about the center of the heater, the first showing the course of the water and the other the course of the steam. The tubes are arranged in six segmental groups, and the water passes simultaneously through the tubes of each group and successively through the groups. At the top and bottom the tubes terminate in headers, which are divided by

Fig. 1.—A 600 Horse-Power Blake Multicurrent Heater of the Vertical Type.

partitions which connect adjacent sets. The water entering the water inlet at the side of the heater near the bottom passes up through the first nest of pipes, through the header into the second and down to the lower header into the third, and so on until it issues from the sixth nest through the water outlet. The course of the steam, shown in Fig. 3, is through a path gradually decreasing in cross section. Entering at the steam inlet near the top of the heater it passes down over three sets of the water tubes, the cross section in this chamber being half the total circular area. The diametrical baffle plate extends from the top of the heater nearly to the bottom and causes the steam to pass up through the two adjacent chambers, each having one-sixth of the cross sectional area of the heater. The baffle plates dividing these chambers from the remaining chamber extend from the bottom of the heater nearly to the top, and the steam next passes downward through a cross sectional area equal to one-sixth of the heater and is finally discharged from the steam outlet at the bottom. In this way the path of the steam at each change of direction is cut down one-third and compensates for the reduction in volume due to condensation, with the effect of producing a nearly constant velocity.

Fig. 1 shows an exterior view of a vertical heater of 800 horse-power size, in which the parts are disposed as just described. A horizontal form is also made, the theory of operation of which is practically the same though the construction is somewhat modified. In both

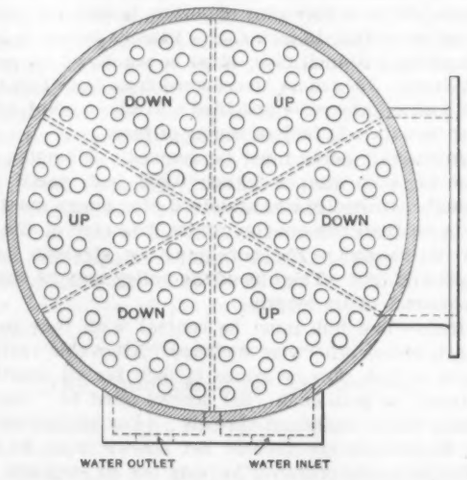


Fig. 2.—Cross Section of the Heater, Indicating the Course of the Water.

forms the tubes are of composition giving a high efficiency in the absorption of heat, as well as long life. They are easily accessible for cleaning and allow for expansion and contraction, thus making it possible to use copper or brass tubes if the occasion requires. At the ends the tubes are expanded and secured into two heads, one of which is rigid and part of the main casing, while the other is bolted to a steel plate or diaphragm, the periphery of which is attached to the flange of the heater shell. This arrangement takes care of unequal expansion between the tubes and the shell. Another excellent feature is the absence of stuffing boxes or packings of any kind, doing away with the liability of leakage of feed water. The cross sectional area between the tubes is greater than the area of the exhaust pipe, so as not to cause unnecessary obstruction to the flow of steam, and avoids excessive back pressure. The condensation of the steam accumulating in the steam passages is removed through

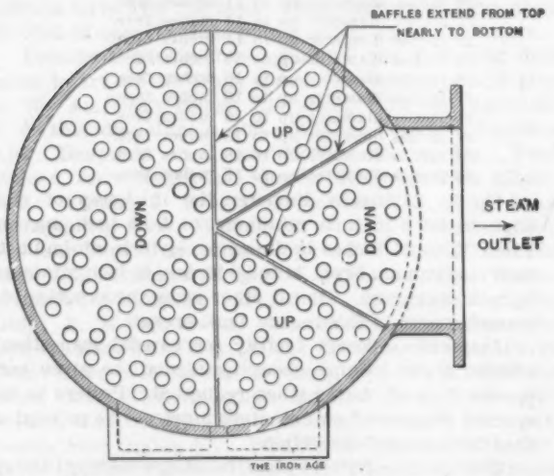


Fig. 3.—Cross Section of the Heater, Indicating the Course of the Steam.

drip pipes. Blow offs are also provided to keep the heater clean and free from sediment. Access to the heater is had by removing the heads. The tubes of the vertical heaters can be cleaned from the top, and those of the horizontal heaters from either end. The heaters are tested to a pressure of 250 pounds per square inch, giving a safe working pressure of 175 pounds. They are

made in sizes up to 500 horse-power in both the horizontal and vertical type. The manufacturers are the Blake & Knowles Steam Pump Works, 114 Liberty street, New York City.

A New Interlocking Steel Sheet Piling.

The increasing cost of timber is making more general the substitution of steel piling, most of the forms of which are built up of standard structural steel sections now rolled by the steel mills. Important advantages of the steel sheet piling are the saving of time, labor and cost, but particularly in available space, for in order to build a cofferdam from timber it is necessary to sink two separate lines of piling, connect them with planking, separate them with beams and tie them with through rods or braces, filling the space between with clay. Even this laborious and expensive construction fails at times, because in some soils the timber cofferdams give way. Steel angles, beams, channels and zees are now rolled as long as 60 feet, so that it is possible to use sheet metal piling in place of timber even where it is necessary to sink it to a great depth. The metal sheet piling described in this article is intended to replace the double wall construction just referred to with a single interlocking wall, the members of the piling being interlocked at the time they are driven.

This piling is made of a series of units, as shown in Fig. 1, consisting of a zee bar riveted to one side of the plate and an angle riveted to the other, with a separating strip between the angle and the plate of a thickness to admit the leg of the zee between the longer leg of the angle and the plate. Corners are made by fitting the angle edges of two units together instead of fitting an angle and a zee, and it is necessary for such members to have angles on both edges, as shown in Fig. 3, if it is desired to reverse the sequence of angles and zees. Junctions of dividing partitions with the main wall are made as illustrated in Fig. 4. In general, standard piling will consist of 4-inch zee bars, 6 x 3½ inch angles and 15-inch plates, all ⅜ inch thick and of any required length.

A fortunate feature of this form of steel sheet piling is that when driven in ordinary soil, such as clay and quicksand, enough of it works into the joints to make them practically water tight. Where the soil is of such a gravelly character that it will not calk the seams, or when the piling is driven in clear water, a strip of soft wood is inserted in the angle where the piles join, as shown in Fig. 5, and is held there by zee bar clips bolted 5 feet apart. The wooden strip swells when wet and makes a water proof joint.

It is said that this piling can be pulled and redriven a number of times, and when it has outlived its usefulness can be sold at a high scrap value. It is driven with an ordinary pile driver, a block or cushion being interposed between the head of a member and the hammer of the pile driver. Great strength is claimed for this form, due to the web of the zee bar being parallel with the line of pressure. In driving the piling best results are obtained by leaving the zee edge of the last plate as the free end of the piling.

Piling of this character is adapted to the construction

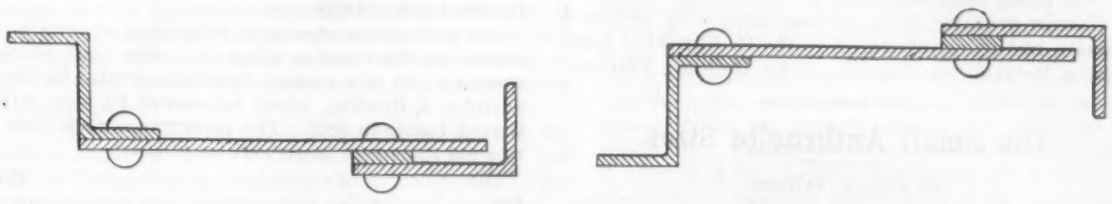


Fig. 1.—Two Continuous Wall Sections Detached.

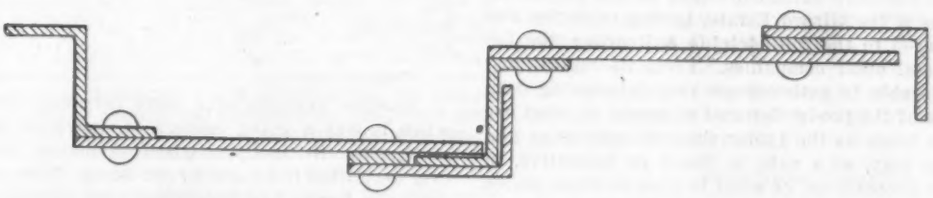


Fig. 2.—Two Wall Sections Interlocked.

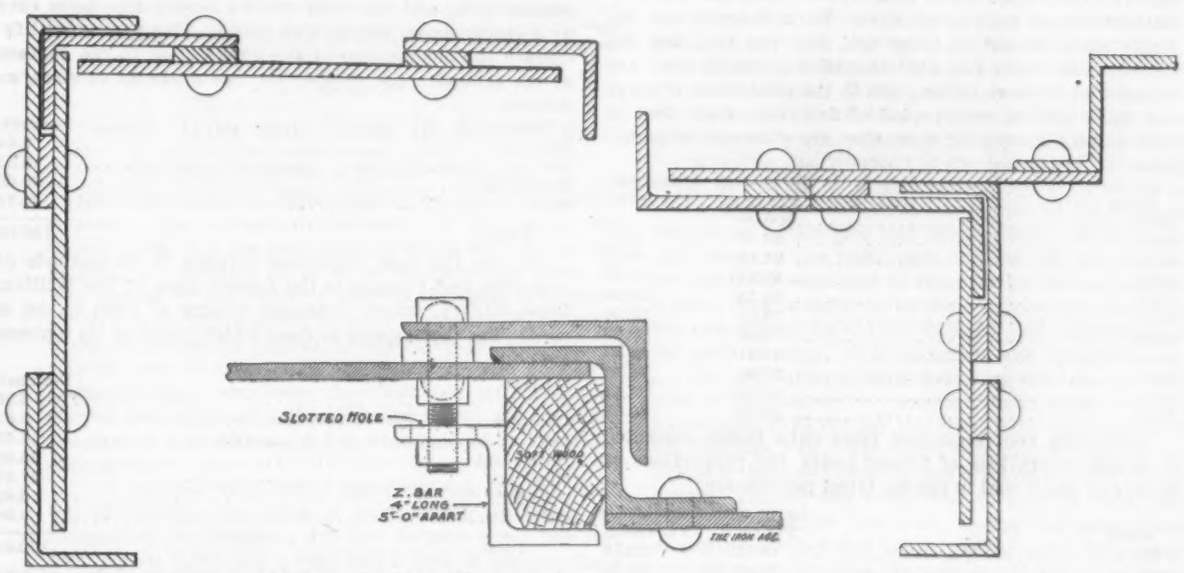


Fig. 3.—A Corner.

Fig. 5.—Method of Calking.

Fig. 4.—A Partition Joint.

A NEW INTERLOCKING STEEL SHEET PILING.

of retaining walls, foundations, cofferdams, submarine work and to parts of mine shafts where quicksand and water are encountered. In the latter case a complete square or rectangle the shape of the mine shaft can be introduced at any portion of the shaft. In erecting buildings where one foundation is to be excavated considerably below that of an adjoining structure, the sheet piling can be driven close to the foundation of the old structure, effectively preventing the weakening of that foundation by adjoining excavation and making it unnecessary to build heavily braced sustaining walls for the new structure. In such a case the steel sheet piling would remain in position permanently.

The piling described is the invention of H. Wittekind, a Chicago engineer, formerly associated with Jenney & Mundie, and is manufactured by the H. Wittekind Interlocking Metal Piling Company, Cable Building, Chicago.

The Small Anthracite Sizes.

BY FRED. E. SAWARD.

The only concern in the entire anthracite district which makes any very extended report on the marketing of small sizes is the Girard Estate, having collieries and washeries leased to the Philadelphia & Reading, the Lehigh Valley and other companies. From its report, just issued, one is able to gather some very interesting data along the line of the production and shipment of what are known in the trade as the junior sizes of anthracite, and their tonnage may, as a rule, be taken as indicative, in the matter of proportions, of what is done at other places and by other concerns. It appears that in the past year there were shipped to market, freshly mined, something like 1,050,282 tons, while from the culm banks were reclaimed 464,931 tons of all sizes. With chestnut and the larger sizes classed as large coal, and pea coal and the sizes smaller than pea coal classified as small coal, the changes which have taken place in the production of large and small coal in each period of five years since 1865 to 1900 and for every year since then are shown to be as follows:

Years.	Large coal. Per cent.	Small coal. Per cent.
1865	100.00	....
1870	96.43	3.57
1875	91.48	8.52
1880	88.21	11.79
1885	80.55	19.45
1890	79.37	20.63
1895	70.95	29.05
1900	57.41	42.59
1901	55.85	44.15
1902	49.76	50.24
1903	50.48	49.52

Excluding coal reclaimed from culm banks deposited in mining operations of former years the proportions of large and small coal in the six latest periods are:

Years.	Large coal. Per cent.	Small coal. Per cent.
1890	79.72	20.28
1895	70.95	29.05
1900	63.31	36.69
1901	63.46	36.54
1902	64.31	35.69
1903	66.75	33.25

The 33.25 per cent. (349,238 tons) of small coal derived from fresh mined coal in 1903 was made up of different sizes, as follows:

	Per cent.
123,120 tons of pea coal	11.72
160,618 tons of buckwheat coal	15.29
65,424 tons of rice coal	6.23
45 tons of barley coal	0.01
29 tons of culm	....

The average rates of royalty received for the year 1903 on the total production, on the coal shipped to market, on that freshly mined and on that reclaimed from culm banks, and a comparison of these rates with those received in the two preceding years, are shown in the folowing table:

	1903.	1902.	1901.
On coal produced	23.54	21.87	24.94
On coal shipped to market	26.44	26.63	28.70
On coal freshly mined	31.47	31.25	30.94
On coal reclaimed from culm banks	15.07	14.38	13.66

The decrease in the average royalty on the total shipments, while the average rates on both the coal freshly mined and that reclaimed from culm banks has increased, is accounted for by the larger proportion of coal coming from the latter source. Thus in 1903 coal reclaimed from culm banks formed 30.7 per cent. of the total shipment, while in 1902 this proportion was 27.50 per cent., and in 1901 only 13 per cent.

Pea coal shipments began in 1867, with a tonnage of 1801 tons, and in 1903 the total was 210,170 tons; buckwheat began to be marketed in 1878, with a total business for that year of 696 tons, and the shipments in 1903 amounted to 327,398 tons. In 1895 washeries were instituted, and in that year we find that 14,820 tons of rice and barley and culm were sent to market, while in 1903 the total was 212,699 tons.

As an example of what is being done at certain of the washeries, the result is given at a culm bank which represents a pile at a colliery formerly operated by the Philadelphia & Reading, which terminated its lease with the Girard Estate in 1895. The percentages made here from this old time culm bank were as follows:

Sizes.	Per cent.
Egg	0.33
Stove	2.71
Chestnut	9.06
Pea	32.32
Buckwheat	32.76
Rice	22.82
Total	100.00

Another example of a more carefully operated plant when it was a going concern is shown in the subjoined statement. Evidently no great amount of large coal was ever permitted to be sent to the dump. The material from the culm banks has heretofore been carried up into the breaker by a conveyor line, to the foot of which it is washed in sheet iron troughs. This will now be dispensed with, and the culm will be loaded into mine cars by a steam shovel and hoisted above. This system will facilitate the cleaning up of the banks close to the surface of the ground. The production was made up of sizes, as follows:

Sizes.	Per cent.
Chestnut	9.64
Pea	18.02
Buckwheat	39.60
Rice	32.74
Total	100.00

By far the most important concern in its methods of operation and tonnage is the former lease of the William Penn colliery, where hydraulic mining of culm banks is used. The percentages of sizes which make up its tonnage are:

Sizes.	Per cent.
Stove	4.83
Chestnut	9.81
Pea	14.63
Buckwheat	36.38
Rice	27.87
Barley	6.42
Culm	0.06
Total	100.00

Evidently here was an old bank and a good deal of coal went there in the flush times. The banks are being very thoroughly cleaned up as the work progresses. As shown above, they yield an unusual proportion of large coal. Four conveyor lines of an aggregate length of 1080 feet are used in bringing material to the foot of the elevator tower. Here an auxiliary screening plant, consisting of a set of rolls and a shaking screen, has been placed, in which the coarse material is ground up and partially sorted and picked before it goes into the washery proper. The hydraulic mining of the culm banks, breaking down the banks by streams of water thrown with considerable force from lines of hose, is a special and economical feature.

In conclusion, it may be stated that the production of small sizes has greatly increased in the last few years, because a considerable amount is washed out of the huge culm piles which surround the anthracite mines. In 1901 more than 36 per cent. of the total production of anthracite coal was below the size of chestnut, and in 1902 it increased to 39 per cent. The Lehigh and Schuylkill regions produce a larger proportion of the small sizes than the Wyoming region. The actual production in 1902 was: Pea, 13.34 per cent.; buckwheat, 14.17 per cent.; rice

and less, 11.51 per cent. During 1903 the production of pea and buckwheat was about in the same proportions as in the preceding year. The sizes below these were produced by the large companies in rather less quantities. Of the Reading's output, 6.93 per cent. was below buckwheat; Lehigh Valley, 9.01 per cent.; Central Railroad of New Jersey, 11.10 per cent.; Delaware, Lackawanna & Western, 11.79 per cent.; Delaware & Hudson, 6.24 per cent.; Pennsylvania, 8.14 per cent.; Erie, 8.98 per cent.; Ontario & Western, 11.52 per cent.; Coxe Bros., 5.63 per cent. The production of the small sizes except by washeries cannot be controlled, a fact which has much to do with the difficulty of distribution. While the mines are always producing the steam sizes, the demand from consumers is very light at certain seasons of the year, and it is this which causes a fluctuating price in these coals and compels the stocking thereof in the summer months at the various places of deposit owned by the large carrying companies.

While upon this subject it is interesting to note the system perfected by T. P. Burke, chief engineer of the United States Cotton Company, Central Falls, R. I., for burning these sizes, described as follows:

The principal feature of the apparatus is a fan or blower independently driven by a small steam engine, the speed of which is controlled by the steam pressure through a steam damper governor. The air from the fan is conveyed through pipes into the ash pit under the grates. The air ducts terminate in an adjustable blast outlet, which regulates the blast required for each boiler of the battery. It is estimated that the combustion of a pound of average coal requires from 150 to 300 cubic feet of air, and thus the question of supplying air is an important one in plants of considerable size. Chimney or natural draft is most commonly employed for the delivery of air to the ash pit, and with natural draft the air supply is dependent upon the heat of the gases passing into the chimney. This takes from the furnace part of the hot gases in drawing the air necessary to combustion through the grates and the fuel, especially when the finer grades of anthracite—Nos. 1, 2 or 3 buckwheat—are burned, the fuel being so compact that air cannot pass through it in sufficient volume except by wasteful expenditure of heat to create a powerful draft in the chimney.

Coal, Iron and Steel in Scotland.

The Coal Combine a Disappointment.

GLASGOW, April 14, 1904.—One of the largest industrial combines ever formed in Scotland (if we except the thread agency) is the coal combine which was established in 1902, and referred to in these letters at the time. It was formed by the United Collieries, Limited, a Glasgow concern with eight collieries and a capital of £300,000, which increased its capital to £3,000,000 for the acquisition of some 24 other collieries bought up and held by a London colliery syndicate, in which the late Frederick Gordon was supposed to be a moving spirit, and of which the firm of J. S. Morgan & Co. were said to be the financial agents.

The combine was formed about the end of June, 1902, but there was some delay in transferring the titles and completing the finances. Its first balance sheet has just been issued, including a year and a half of the combine's operations and a year and a quarter of the old company's operations. At the formation of the combine an accountant's statement was published certifying that 16 alone of the concerns to be combined had for three years averaged aggregate profits of over £224,000 per annum. By the combination it was proposed to effect a saving on the combined output of 6,000,000 tons per annum equal to an extra profit of 6 pence per ton. From the report of the directors, however, it appears that for two years and three-quarters the gross profits of the combine amount to only £238,923 4s. 4d., and after debiting to revenue the cost of management, directors' and auditors' fees and general expenses, there remains a balance at credit of profit and loss account of only £125,411 13s. 8d., to which falls to be added the balance brought forward from last statement of accounts of, £2691 9s. 7d., and the amount standing at the credit of reserve fund, £20,000, making a total of £148,103 3s. 3d., which has been treated as follows: In payment of debenture interest, £74,286 5s.; interest to bankers and others, £10,215 11s. 4d.; dividend on the preference shares to June 30, 1903, £55,958 18s. 4d.; leaving a balance of £8542 8s. 7d., which the directors recommend should be carried forward. That is to say, there is no dividend at all on the £1,000,000 of ordinary stock. The report says:

Unfortunately, the coal trade during the period embraced in the accounts has been in a state of decline, profits having been adversely affected by prices diminishing, while wages have not been reduced in proportion. A considerable outlay of capital on improvements and additions has been expended, which it is expected will prove remunerative. The directors are assured that the developments in sinking new pits and otherwise have been such as to make a larger quantity of coal available than there was at the time of the purchases from the vendor syndicate, and in these circumstances the directors consider it unnecessary to write off any sum for depreciation, or to debit revenue account with any proportion of the sinking fund.

The auditors append a lengthy note to the balance sheet, exonerating themselves from certifying certain items concerning which they have only the verbal assurances of the directors and their officials with regard to capital expenditure, depreciation, stocks of coal, &c. The capital of the combine consists of £1,000,000 preference shares, £1,000,000 ordinary shares and £1,000,000 debenture bonds. The debenture bonds were all taken up by J. S. Morgan & Co., London, who afterward were unable to persuade the public to relieve them of the securities.

In the coal trade generally an improvement, however slight, can be noted in the west of Scotland. The outlook has become brighter in sympathy with the firmness of the Newcastle and Cardiff markets, and there has been a rather better demand for some kinds of coal. In view of the opening of the Baltic an improvement has been brought about in forward booking for all coal, and prices have been well maintained.

The Tube Combine.

Quite other than the coal combine is the tube combine, also a Glasgow concern, to which I have formerly referred—viz., Stewart & Lloyds, Limited. The annual report of this concern recommended a dividend for the half year on the ordinary shares of 11 per cent. per annum, and on the preference shares at the rate of 6 per cent. per annum. At the annual meeting in Glasgow the chairman explained that during the past year, consequent upon the recent amalgamation with Lloyd & Lloyd's undertaking, the attention of the board has been occupied with the subject of bringing into common focus the methods and customs of the two branches of the business as carried on in Glasgow and Birmingham. While considerable progress has been made toward the adoption of the best methods employed in the past by the two businesses, a good deal remains to be done before the experience of the two companies is fully utilized, and consistently similar practice obtain in Birmingham and Glasgow.

The net balance, after deducting the interim dividend paid in September last, amounts to £171,388, which compares with £114,314 for the year 1902, and with £103,182 for the year 1901. The board recommend that out of this £171,000 there be placed to depreciation account £30,000, as against £15,000 last year; and to reserve fund, £25,000, as against £11,000 last year; to pay the same dividends as during the last five years, and to carry forward to the current year's account the sum of £53,138. The depreciation proposed is about 3 per cent. upon the expenditure on capital account, but in addition to this all repairs and improvements have been debited to the revenue of the year before striking the balance.

New Type of Locomotive.

Much interest is taken in Glasgow, which is a sort of hub of the locomotive industry, in a new type of engine which is now being tried by the London & North Western Railway, built at the Crewe Works of the company. This engine is quite different from the compounds designed by F. W. Webb, former locomotive superintendent of the London & North Western. It is of the simple high pressure type, having four coupled wheels, each 6 feet 9 inches in diameter, with a double radial truck in front, the wheels of which have a diameter of 3 feet 9 inches. The cylinders are 19 inches, with a stroke of 26 inches, and the total heating surface is 2009.7 square feet, the tubes contributing 1848.4 square feet, while the fire box contributes 161.3 square feet. The barrel of the boiler has a mean diameter of 5 feet ¾ inch, and its center line is 8 feet 5 inches above the rail level. In ruuing order the en-

gine weighs 59 tons 15 cwt., of which 19 tons are on the driving and 19 tons on the trailing wheels. The performances of the new locomotives are being watched with the greatest interest in order that it may be seen whether the four-coupled engine is able to cope single handed with the heaviest Scotch expresses of the same railway.

The Dietrick Scrap Cutting Machine.

A machine for cutting and busheling all kinds of scrap material, including bunches of wire and tangled masses of sheet iron trimmings, has recently been patented by C. F. Dietrick of Berwick, Pa. The idea was conceived while the inventor was foreman of the puddling and busheling department of the American Car & Foundry Works, being the outcome of his recognizing how wasteful of time were the then existing means of performing the work. It is intended for use in scrap mills and scrap yards. Among its advantages it is claimed that it will cut anything that other shears will cut, in addition to the unwieldy material that it is specially designed for. The accompanying half-tones are taken from photographs of the inventor's model, which was constructed on a scale of about one-half the size of the proposed standard machine.

The construction is illustrated in the line drawing,

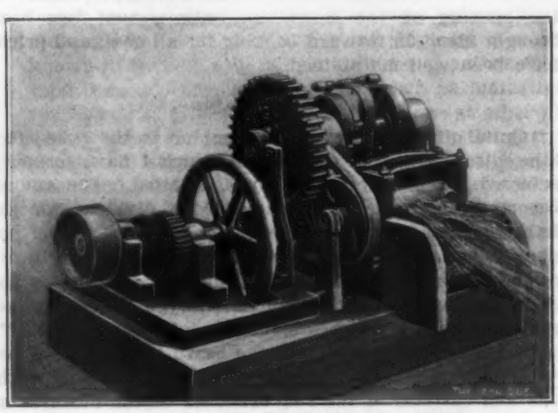


Fig. 1.—Feeding Side.

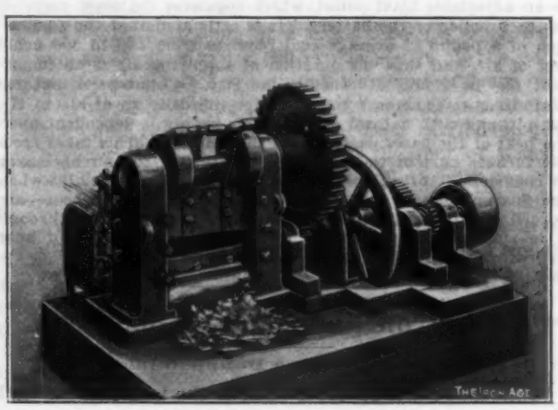


Fig. 2.—Delivery Side.

Views of a Model of the Dietrick Scrap Cutter, Provided Only with Primary Cutting System.

Fig. 3. There are two main parts—the primary feeding and cutting mechanism and the secondary feeding and cutting mechanism. The primary cutting mechanism consists of a pair of standards, *a*, *a*, secured to the base and provided with vertical guideways, in which a reciprocating knife carriage travels. The latter carries the movable blade of the shears, which is detachable. Fixed to and projecting upwardly from the carriage are arms, *b*, *b*, curved at their upper ends and carrying lateral projecting friction rollers, *c*, *c*. In the upper edge of the knife carriage, adjacent to the ends, are journaled other friction rollers adapted to engage the two cam disks, *e*, *e*, which are mounted on the main operating shaft, *d*. The same cam disks engage the rollers *c*, *c* on the arms *b*, *b*. Wear plates are arranged in guideways, and are adjustably secured to their rear walls by means of set screws, so that by setting these plates the wear on the knife carriage may be taken up and the knife blades kept in proper relation. One end of the shaft projects beyond its supporting standard and is journaled in an outboard bearing. To this extension of the shaft is fixed a master gear wheel, *f*, which engages with the gear pinion *g* mounted on the drive shaft. The latter is journaled in the lower part of the main standards and in short outboard standards immediately below the shaft *d*, and is made in sections, the power section carrying the fly wheel *h* and the power pulley *i*, an inner section, which carries the pinion *g*, and the middle square section *j*, in which is incorporated a coupling. The latter consists of slidably mounted concave disks on the square ends of the middle section, with similar disks on the ends of the adjacent shaft sections. The concave faces of the disks are brought together and securely connected by bolts. This construction purposely weakens the shaft somewhat, so that should an obstruction be brought under the knife which could not be cut the shaft would be broken at this weak point, preventing the knife or other expensive parts of the machine from breaking. The coupling may be quickly and inexpensively repaired. *k* is a combined belt and ratchet wheel, loosely mounted on the shaft *d*, between the gear wheel *f* and the standard *a*. This wheel is adapted to be intermittently locked to and released from the shaft *d* by means of an automatically operating pawl, which is pivoted to the inner face of the gear wheel *f*. The pawl is normally held in engagement by means of a spring, which bears against a stud projecting laterally from the end of the pawl through on opening in the wheel *f*. The stud carries a friction roller at its free end, which, when the wheel *f* is rotated, will be brought into engagement with a cam shaped projection formed on the adjacent side of the standard, and will rock the pawl on its pivot, disengaging it from the teeth of the wheel *k*, and cause it to stop until the friction roller reaches the end of the cam, when the spring will again throw the pawl into engagement with the ratchet teeth on *k* and rotate it. Standards *l*, *l*, arranged in front of the standards *a*, *a*, are connected at their upper ends by flat bars. The forward portion of the standards *e*, *e* carries the first pair of feed rolls, *m*, *m*, which are placed one above the other and separated at a distance sufficient to receive the bulky scrap. The rolls are rotated in a reverse sense by spur gears mounted on extensions of their journals, and the power is transmitted to the upper roll by a pulley belted to the wheel *k*. Sprockets are mounted on the opposite ends of the roll journals. Behind the rolls *m*, *m* there is a second pair of feed rolls, mounted closely together and driven by chains from the sprockets on the first set of rolls. The upper roll of the rear pair is movable vertically and slides in guideways, but is normally depressed by heavy coiled springs to hold the roll yieldingly down into place, so that it will rise and permit any large obstruction to pass through without breaking any of the parts. On the surfaces of the feed rolls are heavy pyramid shaped teeth to positively feed the material.

The stationary lower blade of the shears is removably secured to the bed in such a position that the upper movable blade may descend closely to it. The upper blade has an inclined lower edge so as to produce a drawing cut, particularly desirable for the work to be handled. The cams on the operating shaft are of a size to raise the carriage and upper blade of the knife high enough to admit the material.

The secondary cutting mechanism is arranged upon the base in the rear of the primary cutting mechanism and at right angles to it. The construction and operation are substantially the same for both, with the exception that the secondary cutting mechanism is somewhat lighter. The feeding mechanism in the secondary system

consists of a pair of feed rolls arranged in front of the cutting blades and driven by chains. In front of this pair of feed rolls are arranged a series of horizontal rolls to pass the work from the primary to the secondary shears. These also are driven by chains.

In operation the metal is fed through the primary feed rolls to the primary cutting blades, the feed rolls being intermittently driven, as already described, with the timing of the action such that the feeding takes place only when the knife is ascending, so that during actual operation of cutting the feed rolls are still, preventing the material from jamming against the cutting apparatus when the blades are together. After the material is cut by the primary apparatus it falls in strips onto the horizontal feed rolls of the secondary system and is fed to the secondary cutting blades, which cut the strips in the opposite direction into small pieces, which are more conveniently handled. The feed rolls of the secondary system have a similar intermittent movement, active only while the blades are open.

In a full size machine the blades for the primary cutting mechanism will be about 5 feet long and will open at their lowest angle 10 or 11 inches. It is anticipated that such a machine will be able to cut about 1000 tons per day if kept in continuous operation. This is based on the performance of the small model, which is the only one that has as yet been put in operation. The operation of the shears will require but two men, whereas the best methods formerly in use needed the attention of six or ten men.

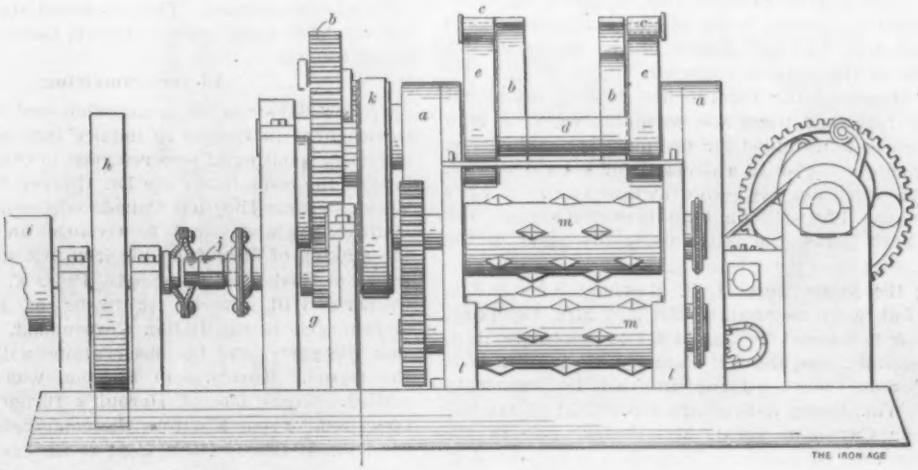


Fig. 3.—Front Elevation of the Dietrick Scrap Cutter.

Pacific Coast Trade Conditions.

SAN FRANCISCO, April 15, 1904.—We have had fine warm weather for over a week with some light rain at the close, which was the very thing wanted, and the outlook now for crops, except for cereals in the South, is very good. The storms and rains of March, though beneficial on the whole, yet interfered so much with transportation and with building operations that trade was quite dull and this dullness lasted until the early part of this month. Hence the hardware, iron and steel and agricultural implement business was backward and the sales of the wholesale houses did not come up to what they should have done. This, of course, refers more particularly to San Francisco and the interior sections of the State. In the South, uncertainty as to crop conditions held matters back.

The steam schooner tie up is at an end, and the movement of supplies for mills in Humboldt and Mendocino counties is once more in order. In the mining sections of the State work will soon be active everywhere and machinery will be in good demand. The rains have given the miners water for a good while to come. Outside of San Francisco there are many new car lines planned which will need iron and cars and other supplies. Building in the city has taken a start again, and the number of new contracts recorded every week is increasing. It is the same in other parts of the State. Advices from Los Angeles say that building may be almost classed as having a boom there. Hundreds of houses, costing from $3000 to $5000, are being erected and the number seems to increase rather than decrease. Truly Los Angeles is a wonderful city. The oil industry is flourishing; last year's yield was even larger than estimated, exceeding 23,000,000 barrels, and the production is still increasing, with a large demand for pipe and other supplies. The various shipyards, from the Union Iron Works down, are busy, and a large addition will be made to the sail and steam tonnage of the State built in our own yards and needing supplies of machinery and other articles in iron and steel.

The imports of iron both by sea and rail for the past month have been very light. During the past two weeks we have had to hand of foreign vessels only the "Halewood" from Antwerp, with 3411 packages of steel, 100 tons pig iron, 680 fish plates and 4377 bundles iron. The Panama steamers have had in round numbers 16,000 packages of iron, steel, hardware, pipe and plate iron. The "Donna Francisca," from Liverpool, had 10,912 boxes of tin plate. The export trade has been fairly good, except to China, to which the shipments of every kind have fallen off to a minimum. It looks much as if the Chinese were afraid of China proper being involved in war. Japan, however, takes large quantities of bicycles and machinery. The "Coptic" on April 3 had $16,001 in bicycles, $3189 in hardware, $5448 in machinery and $528 in agricultural implements, or altogether about $25,000, and the "Korea" had a much larger value of these goods. In connection it may be of interest to show what Port Arthur, or Russian China, and Korea did in this respect before the war. The following are the exports for 1903:

	Port Arthur.	Korea.
Agricultural implements	$80	....
Bicycles	552	$277
Instruments, electrical	1,347	2,933
Instruments, various	65	31
Castings	217	2,382
Tools	17	2,105
Machinery	11,540	11,429
Stoves	40	995
Scales	150	....
Safes	450	....
Locks	...	60
Bar iron	...	791
Sheet iron	...	440
Steel rods	...	830
Wire nails	...	1,332
Hardware, various	988	3,573

J. O. L.

Our attention has been called to a typographical error in the paper entitled "Ferronickel Direct from Pyrrhotite," by Ernst A. Sjostedt of Sault Ste. Marie, Ontario, which was published in *The Iron Age* of February 18, 1904. The energy expended in the smelting experiments referred to was 1350 amperes and 80 volts, and not 135 amperes and 80 volts as printed.

Canadian Affairs.

Toronto's Fire.

TORONTO, April 23, 1904.—The great fire in this city, in which about $10,000,000 worth of property vanished in smoke, is of little scientific value either to architects or underwriters who are studying means to reduce the conflagration risk. It yields no lessons that were not well taught before. It tests nothing whose efficiency for fire protection was not thoroughly tried before. There was nothing peculiar in the cause of the fire, nothing novel in the conditions. At first it was attributed to an electric wire not sufficiently insulated. Now there is doubt thrown on that theory of its origin, for, in the first place, it cannot be proved or made even to look probable by circumstantial evidence, and, in the second, there is said to have been a fire kindled in an unused stove in the building from which the first flames broke. This stove fire is alleged to have heated the draft pipes to redness, and is supposed to have been not quite extinguished when the employees left. As to the materials of construction and the precautions against fire, no inductions can be drawn from them for the correction of received ideas as to fire prevention. Not one of the buildings destroyed could be described as of fire proof construction. The district ravaged was the main center of the wholesale stationery trade of Canada, and perhaps in no equal area was there more of the wholesale dry goods trade of the country collected.

The weakness of the Toronto fire fighting equipment lies in the fact that there are no mains where a high pressure can be maintained for fire purposes exclusively. This fire has given rise to a demand for such a service. Considerable attention has been drawn to *The Iron Age's* articles on the Philadelphia high pressure system and the New York plans, the latter being discussed in the last issue.

Among the losers were H. S. Howland Sons & Co., wholesale hardware merchants; McClary Mfg. Company, stoves; M. & L. Samuel, Benjamin & Co., wholesale hardware merchants; the Merrick Foundry Company; Wm. Jessop & Sons, steel. These are all in temporary premises. Wm. Jessop & Sons are a Sheffield (England) firm. Their Canadian agent, Mr. Bailey, was in the West at the time of the fire. Their loss is estimated at $50,000, which is said to be largely covered by insurance. H. S. Howland Sons & Co.'s loss is placed at $200,000, but there is a large insurance.

The Sault Guarantee.

After a long and very contentious debate, the bill enabling the Ontario Government to guarantee the proposed $2,000,000 bond issue of the Algoma Central & Hudson Bay Railway Company was carried in the Legislature on Friday night. That means that the scheme of reorganization will be completed if the parties who have that scheme in hand do all that they undertake to do in the agreement which is entered into with the Government. According to a very detailed statement submitted to the House as part of the documents pertaining to the proposal, the cash expenditures on the property of the allied companies aggregated $28,816,296.10. In the agreement entered into with the Government by the new corporation, called the Canadian Improvement Company, who succeed the Consolidated Lake Superior Company, the sum expended is stated to be more than $30,000,000. In this agreement the conditions of the guarantee are specified and the undertakings of the company are prescribed. These are:

1. To construct and equip the Algoma Central Railway to the Canadian Pacific Railway.
2. To operate the road for passenger and freight traffic.
3. To pay off Speyer & Co. the $5,050,000 due them, and to turn over to the Government as security for the guarantee the bonds, stocks, &c., thus redeemed.
4. To pay off all other outstanding liabilities.
5. To organize a company to acquire all the enterprises of the Consolidated Lake Superior.
6. To convey to the reorganized company all the securities so acquired except those pledged for this guarantee.
7. To provide the reorganized company with a working capital of not less than $1,000,000.
8. To indemnify and save harmless the Government in respect of the guarantee.
9. To accept for the reorganized company three directors appointed by the Government.
10. To have the agreement approved and ratified by the Algoma Central Railway Company and the Manitoulin & North Shore Railway Company.

The scheme of reorganization was outlined in a circular of the Moffly Committee last October. It provides for the raising of $8,000,000. It proposes the formation of a new company with a capital stock of $40,000,000. It also proposes a $10,000,000 bond issue against a mortgage on the Algoma Central and the Manitoulin railways. It offers one share of new stock for two preferred shares of the old company, and one for four shares of the old company's common stock, but with each old share converted the holder must pay $3.

On March 28 last the Moffly Committee certified to the Ontario Government that, under the scheme of reorganization, $1,214,725.50 had been paid into the Fidelity Trust Company of Philadelphia; that $112,046 had been paid into the Morton Trust Company by the shareholders of the Consolidated Lake Superior Company; that from the stockholders who had already made deposits there was still due about $300,000, and that the committee believed $2,000,000 in all would in this way be contributed by the stockholders. It was further stated that $827,200 had been obtained by the underwriting agreements, and that the full sum expected from that source would almost certainly be obtained. Thus, it would appear, the $8,000,000 would be made up, the Ontario Government providing for $2,000,000.

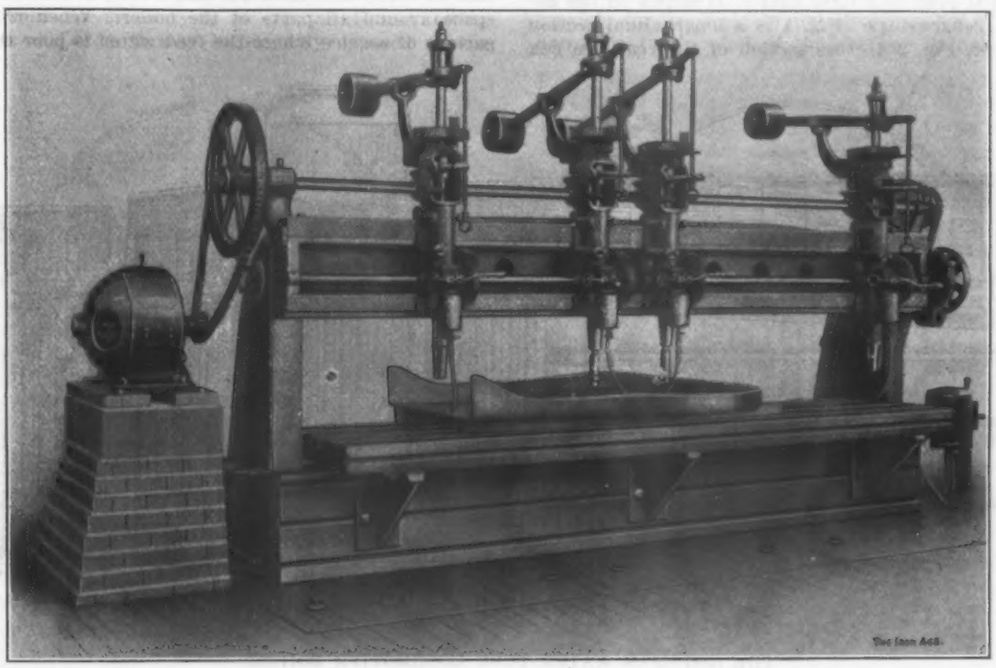
Electric Smelting.

A few days ago the commission sent by the Dominion Government to Europe to inquire into processes for the electrical smelting of iron returned to Ottawa. The members of the commission are Dr. Haanel, C. E. Brown and Thomas Cote. They left Canada on January 21 and, after visiting England, went to Gysinge, in Sweden, where the making of steel from pig iron and scrap by the electrical method was witnessed. Prof. F. W. Harbard of Cooper's Hill, Surrey, professor of metallurgy, and metallurgist to the Indian Government, was engaged to join the party, and his observations will be included in the report. Kortfors, in Sweden, was the next place visited. There one of Heroult's furnaces was seen in operation. From Kortfors the commission went to Berlin, from Berlin to Paris, next to La Praz, where experiments in making steel from pig iron and scrap, and also in smelting ores, were studied. At Livet, in the Pyrenees, the most important operations were seen. There ferrosilicon was being produced for the Russian Government. But this work was stopped in order to illustrate for the commission the manufacture of pig iron from ores. Ninety tons of Spanish ores were treated. The result was satisfactory. It was also shown by this practical demonstration that steel could be produced by the electrical method. According to an estimate given out since the commission's return, it will cost $8 a ton to produce pig iron in an electric furnace. C. A. C. J.

The Consolidated Lake Superior Company to Be Reorganized.—The Canadian Improvement Company, who will be the successors to the Consolidated Lake Superior Company, will embrace among the stockholders E. J. Berwind, John T. Terry, Jr., C. E. Orvis, A. T. Boller, W. L. Harrison and W. S. Hobble of New York, Samuel Rea, A. H. Berwind, W. J. McCahan, C. S. Hinchman, James Butterworth and T. C. Larch of Philadelphia, George B. Terrill of Orange, N. J.; E. D. Trowbridge of New Haven; F. Hamlin of Chicago, and F. H. Clergue, the promoter and sponsor of the old Consolidated Company. It is understood that C. D. Warren, president of the Traders' Bank of Toronto, will be president of the new company, and that T. J. Drummond will be vice-president. With the Ontario Government loan guarantee of $2,000,000, now authorized, the company will pay off those members of the Speyer Syndicate who do not wish to renew their portion of the loan which was foreclosed last fall. The stockholders of the new company are looking forward with great expectations to the resumption of operations in the steel works at Sault Ste. Marie. They will be protected by a duty of $7 per ton when they begin to make steel rails.

The Niles Four-Spindle Mud Ring Drill.

The motor driven mud ring drill illustrated herewith is installed in the boiler department of the Collinwood shops of the Lake Shore & Michigan Southern Railway at Collinwood, Ohio. The motor is mounted on a strong masonry pedestal at one end of the tool, and illustrates a useful expedient where it is undesirable to have the motor on the floor on account of liability to injury, where there are no posts, walls or overhead beams near enough to connect it to, and where time, expense or the nature of the tool forbid the making of a special casting for supporting it from some part of the machine itself. The spindles each have an independent drive and independent feed clutches, so that any number of them may be operated simultaneously or not, at will. The spindle heads may be used at any position along the cross rail, and rack and pinions assist in shifting the heads and accurately adjusting them in any location. The motor controller is located at the end of the machine opposite the motor, and is independently supported from the floor. A system of automatic lubrication connects to each spindle by means of flexible hose.



A MOTOR DRIVEN MULTIPLE SPINDLE MUD RING DRILL.

The machine was built at the Niles Tool Works, Hamilton, Ohio, and is equipped with a Crocker-Wheeler, size 7½, form I, fully inclosed motor, operating on the multiple voltage system of current supply and driving through a Renold silent chain.

The Anti-Injunction Bill Postponed Until December.

WASHINGTON, D. C., April 26, 1904.—The so-called anti-injunction and anti-conspiracy bill has been disposed of, so far as the present session of Congress is concerned, by the action of the House Judiciary Committee, which by a vote of ten to five has postponed its further consideration until next December. It is a significant fact in this connection that in the last Congress this bill was favorably reported to the House with but two dissenting votes.

The extraordinary demonstration made before the Judiciary Committee by the manufacturers and employers of the country in two series of hearings given in February and March produced a profound impression upon the leading members of the committee, and the scope of the bill and its probable effects now appear to be fully appreciated. Members of both Houses, scores of whom have followed the hearings with close attention, recognize that the passage of such a measure would deal a severe blow to all the industries of the country, and would sweep away the only safeguard which can now be invoked against unscrupulous and lawless labor leaders, who so frequently urge their ignorant followers to acts of violence and crime.

Notwithstanding the fact that this bill was favorably reported a year ago by a vote of 15 to 2 and passed by the House almost unanimously, only a single member of the House has appeared before the Judiciary Committee in its behalf during the present session. Representative Grosvenor of Ohio, the author of the bill, made an argument in its support in which he endeavored to show that the courts have overstepped the bounds of legal propriety in issuing injunctions. He charged that the Illinois courts had issued injunctions prohibiting strikers from speaking to employees who were still at work, but Daniel Davenport, executive agent of the American Anti-Boycott Association, has since presented to the committee certified copies of the injunctions in these cases which completely controvert General Grosvenor's assertions, the courts having enjoined strikers against "speaking to the employees of the company, against their will, for the purpose of intimidating or threatening them," &c.

The postponement of the bill until next December is generally conceded to be equivalent to its defeat. If a motion to report the bill adversely had been pressed in the committee it would undoubtedly have carried. The House leaders, however, not unmindful of political considerations, concluded that it might be the part of wisdom to postpone the bill rather than kill it by direct vote in advance of the elections. This decision is quite generally deprecated by those members and Senators who believe that such issues ought to be squarely met and can always be treated frankly with perfect safety even by politicians. The action of the House Committee on Labor, which recently referred the Eight-Hour bill to the Department of Commerce and Labor against the strenuous protests of the labor leaders, is pointed to as an example that should be followed by all Congressional committees called upon to deal with legislation of this character.

W. L. C.

The American manufacturers of ordnance have pretty well cleaned out their stock with orders from the Russian Government, who have agents at work in the United States getting everything possible in the way of cannon, from the small automatics up to the larger sizes of navy and field guns. The manufacturers have welcomed this

market as making room for a clean slate for their 1904 models. All the Russian orders were for immediate shipment. The Japanese Government also have agents at work, but the Russians have, as a rule, been ahead in the market.

The Hottman Water Tube Locomotive Boiler.

In all locomotives in practical use the fire box construction is such as to require the use of a large number of staybolts, involving considerable expense in making and assembling. The water tube boiler illustrated herewith, the invention of John F. Hottman, Jr., Dubuque, Iowa, was designed particularly for locomotive service, but also for stationary or marine service, and is of a construction dispensing with staybolts. As a consequence it claims the advantages of a saving in expense and the avoiding of danger attending the breaking of staybolts. The principal object of the invention was to produce a boiler in which steam could be generated rapidly, and to this end water tubes are disposed in the forward fire box.

As was said, it is specially intended as a locomotive boiler, and it is in this form that it is shown in the accompanying engravings. Fig. 1 is a longitudinal section of the boiler, Fig. 2 a cross section of the rear fire box viewed toward the front of the boiler, and Fig. 3 a cross section of the forward fire box or barrel of the boiler.

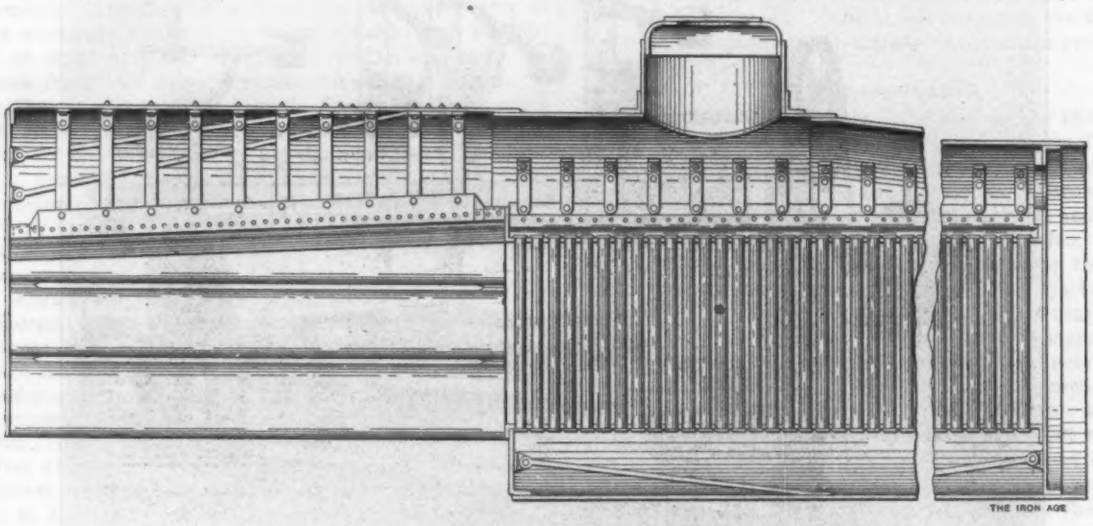


Fig. 1.—Longitudinal Section of the Boiler.

THE HOTTMAN WATER TUBE LOCOMOTIVE BOILER.

The sides and crown of the rear fire box and the sides of the forward fire box are composed of curved plates having their concave surfaces presented to the water and steam space of the boiler. The top and bottom of the forward fire box are formed by the upper and lower tube sheets. The rear fire box has an open bottom, with the lower set of fire box plates bent to form a butt joint with the outer shell. Between the flanged edges of the fire box plates are riveted reinforcing bars, which are connected to the shell at suitable intervals by link braces. The curving of the fire box plates utilizes their tensile strength in resisting the pressure within the boiler, and gives adequate strength without the use of staybolts. The concaved sheets provide a large water space around the fire box, so that the heat of the fire cannot repel the water from the side sheets and burn out the fire box. This is of much importance, as in the ordinary type of locomotive boiler the life of the side sheets is often only 10 or 12 months. All seams and rivets are covered with water, leaving only a single thickness of metal exposed to the action of the fire. This makes it possible to use heavier plates than is ordinarily employed for fire boxes, adding greatly to their durability and the strength of the boiler. The grates are placed at the lowest point of the fire box, bringing the heat of the fire to all parts of the water and producing thorough circulation and an even expansion of the fire box.

The barrel of the boiler contains the forward fire box, which consists of the upper and lower tube sheets and the two sets of curved side sheets. The tube sheets are connected by a large number of vertical water tubes, suitably spaced in a staggering position. This causes the flames and gases to follow a tortuous passage, thoroughly intermingling and improving the combustion, so that a great amount of heat is realized per pound of fuel consumed. The fire surface of each tube is presented to the flames advantageously, as the tubes stand directly across the path of the fire and all their surface is made effective. The vertical water tubes produce excellent water circulation, as the steam globules which are formed rise naturally and easily to the surface of the water, where they are liberated as steam. This feature is of great importance, especially in a locomotive boiler, where large demands for steam often come suddenly. The large number of water tubes employed divide the water into many small units, which are quickly heated. This enables exceedingly rapid generation of steam and a correspondingly rapid circulation of the water, hindering the formation of scale in the tubes and tending to preserve the original high efficiency. Each tube is easily accessible for inspection, as there is ample space around all parts of the boiler. When from long periods of service where the feed water is poor the tubes do become lined with scale they can be cleaned easily without the removal of a single tube, so that the best steaming qualities of the boiler can be maintained with a small amount of labor and expense. The tube ends are surrounded with water, so that the expansion and contraction of the tube sheets and tube ends is kept equal, reducing the liability of leakage.

In the present type of fire tube locomotive boilers the chief sources of trouble are leaky tubes and seams, leaky and broken staybolts, cracked and burned fire boxes. Staybolts not only increase the first cost of a boiler, but frequently occasion repairs, and, moreover, with the breaking of staybolts, there is danger of explosion. Cracked side sheets are caused in a great measure by staybolts. If the troublesome features were eliminated so that the boilers could be operated continuously with little attention, the same amount of traffic could be handled with a much smaller number of locomotives, and a large proportion of the original outlay for locomotives would be saved.

The principal claims for the Hottman water tube locomotive boiler are that it is adapted to the heaviest construction and combines simplicity, strength and durability; that it has a large amount of fire box heating surface; that by generating steam rapidly and utilizing to the fullest extent the products of combustion it is economical in the use of fuel, and that it will safely carry a much higher pressure than is possible with the ordinary type of boiler, thus increasing the amount of motive power available in a limited space.

The Metric Movement in Great Britain.

LONDON, April 16, 1904.—I regret that, owing to compression, a note of mine in *The Iron Age* of March 10 has led to some misapprehension. I there stated that the House of Lords had unanimously passed the bill rendering compulsory the use of metric weights and measures in Great Britain. The correct phrasing should have been that the House of Lords unanimously "accepted the principle" of the compulsory use of metric weights and measures in Great Britain. Samuel S. Dale, the editor of the *Textile World Record*, in a letter in *The Iron Age* of March 31, points out the error, but himself makes another when he says that the second reading of a bill is "a rather perfunctory proceeding, which is sometimes adopted even when the final defeat of the bill is certain." The truth is as I have stated it above. The first reading of a bill is, of course, perfunctory and formal. The chief debate on the principle of the bill is always on a second reading. The bill is then sent to committee, and the third and final reading is generally centered upon the amendments made in committee. This rule is not, however, absolute, but general. If an important political measure is before the House, either Commons or Lords, it may be strongly opposed on the first and second readings, in committee, and on the third reading. The Metric Weights and Measures bill by no means comes under this category, and I was therefore actually but not technically correct in my statement of the case.

Inasmuch, however, as there appears to be some misunderstanding, it may be well explicitly to explain the present situation. In the first place, the mere passage of the bill through the House of Lords counts for little, inasmuch as it has not as yet been dealt with in the House of Commons. The House of Lords has the power to initiate legislation, and often passes bills which must then come before the House of Commons. The measure under discussion is one of these. I do not think there is the slightest chance of a compulsory metric measure passing the Houses of Parliament at the present moment. It is true that strong efforts are being made to induce the Government to take it up. If it becomes a Government measure the probabilities of its passage into law are, of course, greatly increased. In the House of Lords debate the Marquis of Lansdowne, the Government leader, spoke in sympathy with the objects of the measure, but in no way committed the Government. When Lord Tweedmouth suggested that after the bill had passed the House of Lords it should be made a Government bill in the House of Commons, Lord Lansdowne was ominously silent. The Government leader, however, assented to the bill going to a select committee, and generally, in unmistakable terms, showed concurrence with the objects of the measure. It will, of course, be instantly recognized that the House of Lords is not composed of business men, and that the very weighty objections which business men can bring to bear were not broached in the debate in the House of Lords.

A Parliamentary event happened yesterday which lends color to the belief that, however theoretically strong the movement for metric weights and measures may be, it is in reality weak and unlikely to succeed. In the House of Commons a bill was brought in to secure greater uniformity in the administration of the law relating to weights and measures. It seeks to transfer the inspectorship of weights and measures from the local to the central authorities. There are a number of anomalies which would disappear if this became law. Part IV. or clause 32 of the bill, has reference to the metric system. It proposed that after January 1, 1908, the two abnormal systems of troy weight and apothecaries' weight should be abolished in favor of the metric system. The mover remarked that he did not regard this section of the bill as vital, and would abandon it if it were condemned by the judgment of the House. The rejection of the bill was moved because of the fourth part, and accordingly that section of the bill referring to the metric system was dropped. Sir Michael Hicks Beach, the ex-Chancellor of the Exchequer, who was responsible for the Weights and Measures Act of 1889, and knows the inner mind of the average British manufacturer better than most, expressed the opinion that Part IV ought never to have found a place in the bill; though there might be some theorists who wished to establish the metric system in this country, when they came to apply their theories they would find such a mass of opposition as would make their scheme impracticable. The metric proposals being deleted, the bill was read a second time and sent to the grand committee on law.

One feature of the agitation for metric weights and measures should not escape attention. I observe that in America the proposed change is being urged upon American manufacturers because British manufacturers are agreed to it. Over here we are being told that it is only a very short time before America will adopt metric weights and measurements. This little game is in some instances proving very effective, and has not as yet been exposed. It would certainly be well if both Congress and the British Parliament would settle the matter once and for all in the near future. S. G. H.

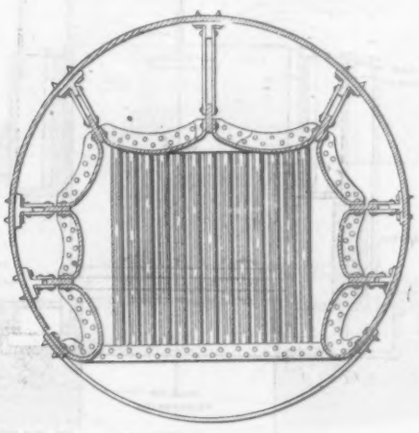


Fig. 2.—Cross Section of the Rear Fire Box.

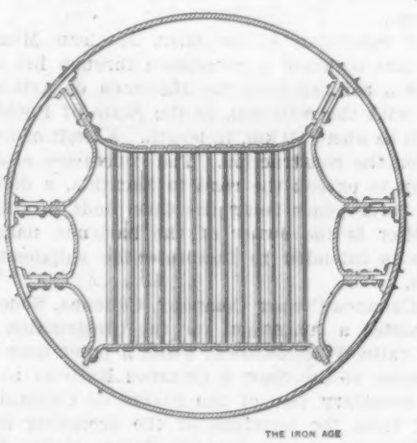


Fig. 3.—Cross Section of the Forward Fire Box.

THE HOTTMAN WATER TUBE LOCOMOTIVE BOILER.

Suit is in preparation against the Pennsylvania Steel Company, owning the West Lebanon blast furnaces, by the Joseph Light heirs of Lebanon, Pa., to recover title to the land covered by the Union Canal towpaths and now claimed by the steel company. The land comprises an area of ½ mile by 150 feet and several acres of canal basin. The suit will be brought on the contention that the ground was given to the canal company with the distinct provision that it should revert to the Light heirs should the canal company ever cease to use it for transportation purposes.

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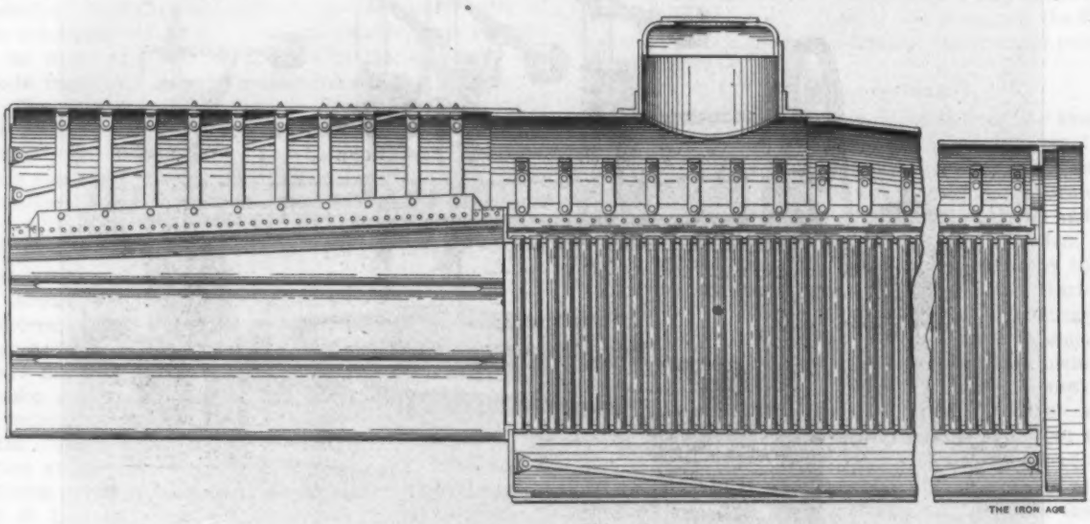

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The sides and crown of the rear fire box and the sides of the forward fire box are composed of curved plates having their concave surfaces presented to the water and steam space of the boiler. The top and bottom of the forward fire box are formed by the upper and lower tube sheets. The rear fire box has an open bottom, with the lower set of fire box plates bent to form a butt joint with the outer shell. Between the flanged edges of the fire box plates are riveted reinforcing bars, which are connected to the shell at suitable intervals by link braces. The curving of the fire box plates utilizes their tensile strength in resisting the pressure within the boiler, and gives adequate strength without the use of staybolts. The concaved sheets provide a large water space around the fire box, so that the heat of the fire cannot repel the water from the side sheets and burn out the fire box. This is of much importance, as in the ordinary type of locomotive boiler the life of the side sheets is often only 10 or 12 months. All seams and rivets are covered with water, leaving only a single thickness of metal exposed to the action of the fire. This makes it possible to use heavier plates than is ordinarily employed for fire boxes, adding greatly to their durability and the strength of the boiler. The grates are placed at the lowest point of the fire box, bringing the heat of the fire to all parts of the water and producing thorough circulation and an even expansion of the fire box.

The barrel of the boiler contains the forward fire box, which consists of the upper and lower tube sheets and the two sets of curved side sheets. The tube sheets are connected by a large number of vertical water tubes, suitably spaced in a staggering position. This causes the flames and gases to follow a tortuous passage, thoroughly intermingling and improving the combustion, so that a great amount of heat is realized per pound of fuel consumed. The fire surface of each tube is presented to the flames advantageously, as the tubes stand directly across the path of the fire and all their surface is made effective. The vertical water tubes produce excellent water circulation, as the steam globules which are formed rise naturally and easily to the surface of the water, where they are liberated as steam. This feature is of great importance, especially in a locomotive boiler, where large demands for steam often come suddenly. The large number of water tubes employed divide the water into many small units, which are quickly heated. This enables exceedingly rapid generation of steam and a correspondingly rapid circulation of the water, hindering the formation of scale in the tubes and tending to preserve the original high efficiency. Each tube is easily accessible for inspection, as there is ample space around all parts of the boiler. When from long periods of service where the feed water is poor the tubes do become lined with scale they can be cleaned easily without the removal of a single tube, so that the best steaming qualities of the boiler can be maintained with a small amount of labor and expense. The tube ends are surrounded with water, so that the expansion and contraction of the tube sheets and tube ends is kept equal, reducing the liability of leakage.

In the present type of fire tube locomotive boilers the chief sources of trouble are leaky tubes and seams, leaky and broken staybolts, cracked and burned fire boxes. Staybolts not only increase the first cost of a boiler, but frequently occasion repairs, and, moreover, with the breaking of staybolts, there is danger of explosion. Cracked side sheets are caused in a great measure by staybolts. If the troublesome features were eliminated so that the boilers could be operated continuously with little attention, the same amount of traffic could be handled with a much smaller number of locomotives, and a large proportion of the original outlay for locomotives would be saved.

The principal claims for the Hottman water tube locomotive boiler are that it is adapted to the heaviest construction and combines simplicity, strength and durability; that it has a large amount of fire box heating surface; that by generating steam rapidly and utilizing to the fullest extent the products of combustion it is economical in the use of fuel, and that it will safely carry a much higher pressure than is possible with the ordinary type of boiler, thus increasing the amount of motive power available in a limited space.

The Metric Movement in Great Britain.

LONDON, April 16, 1904.—I regret that, owing to compression, a note of mine in *The Iron Age* of March 10 has led to some misapprehension. I there stated that the House of Lords had unanimously passed the bill rendering compulsory the use of metric weights and measures in Great Britain. The correct phrasing should have been that the House of Lords unanimously "accepted the principle" of the compulsory use of metric weights and measures in Great Britain. Samuel S. Dale, the editor of the *Textile World Record*, in a letter in *The Iron Age* of March 31, points out the error, but himself makes another when he says that the second reading of a bill is "a rather perfunctory proceeding, which is sometimes adopted even when the final defeat of the bill is certain." The truth is as I have stated it above. The first reading of a bill is, of course, perfunctory and formal. The chief debate on the principle of the bill is always on a second reading. The bill is then sent to committee, and the third and final reading is generally centered upon the amendments made in committee. This rule is not, however, absolute, but general. If an important political measure is before the House, either Commons or Lords, it may be strongly opposed on the first and second readings, in committee, and on the third reading. The Metric Weights and Measures bill by no means comes under this category, and I was therefore actually but not technically correct in my statement of the case.

Inasmuch, however, as there appears to be some misunderstanding, it may be well explicitly to explain the present situation. In the first place, the mere passage of the bill through the House of Lords counts for little, inasmuch as it has not as yet been dealt with in the House of Commons. The House of Lords has the power to initiate legislation, and often passes bills which must then come before the House of Commons. The measure under discussion is one of these. I do not think there is the slightest chance of a compulsory metric measure passing the Houses of Parliament at the present moment. It is true that strong efforts are being made to induce the Government to take it up. If it becomes a Government measure the probabilities of its passage into law are, of course, greatly increased. In the House of Lords debate the Marquis of Lansdowne, the Government leader, spoke in sympathy with the objects of the measure, but in no way committed the Government. When Lord Tweedmouth suggested that after the bill had passed the House of Lords it should be made a Government bill in the House of Commons, Lord Lansdowne was ominously silent. The Government leader, however, assented to the bill going to a select committee, and generally, in unmistakable terms, showed concurrence with the objects of the measure. It will, of course, be instantly recognized that the House of Lords is not composed of business men, and that the very weighty objections which business men can bring to bear were not broached in the debate in the House of Lords.

A Parliamentary event happened yesterday which lends color to the belief that, however theoretically strong the movement for metric weights and measures may be, it is in reality weak and unlikely to succeed. In the House of Commons a bill was brought in to secure greater uniformity in the administration of the law relating to weights and measures. It seeks to transfer the inspectorship of weights and measures from the local to the central authorities. There are a number of anomalies which would disappear if this became law. Part IV. or clause 32 of the bill, has reference to the metric system. It proposed that after January 1, 1908, the two abnormal systems of troy weight and apothecaries' weight should be abolished in favor of the metric system. The mover remarked that he did not regard this section of the bill as vital, and would abandon it if it were condemned by the judgment of the House. The rejection of the bill was moved because of the fourth part, and accordingly that section of the bill referring to the metric system was dropped. Sir Michael Hicks Beach, the ex-Chancellor of the Exchequer, who was responsible for the Weights and Measures Act of 1889, and knows the inner mind of the average British manufacturer better than most, expressed the opinion that Part IV ought never to have found a place in the bill; though there might be some theorists who wished to establish the metric system in this country, when they came to apply their theories they would find such a mass of opposition as would make their scheme impracticable. The metric proposals being deleted, the bill was read a second time and sent to the grand committee on law.

One feature of the agitation for metric weights and measures should not escape attention. I observe that in America the proposed change is being urged upon American manufacturers because British manufacturers are agreed to it. Over here we are being told that it is only a very short time before America will adopt metric weights and measurements. This little game is in some instances proving very effective, and has not as yet been exposed. It would certainly be well if both Congress and the British Parliament would settle the matter once and for all in the near future.

S. G. H.

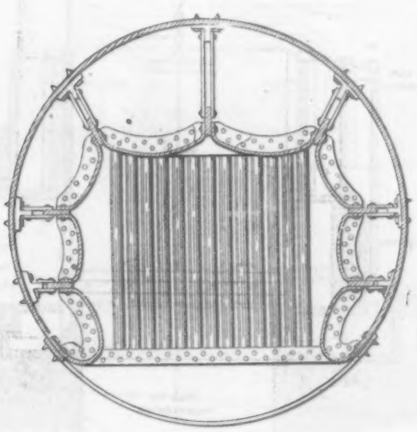


Fig. 2.—Cross Section of the Rear Fire Box.

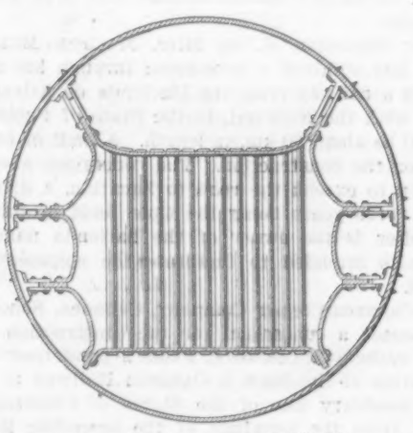


Fig. 3.—Cross Section of the Forward Fire Box.

THE HOTTMAN WATER TUBE LOCOMOTIVE BOILER.

Suit is in preparation against the Pennsylvania Steel Company, owning the West Lebanon blast furnaces, by the Joseph Light heirs of Lebanon, Pa., to recover title to the land covered by the Union Canal towpaths and now claimed by the steel company. The land comprises an area of ½ mile by 150 feet and several acres of canal basin. The suit will be brought on the contention that the ground was given to the canal company with the distinct provision that it should revert to the Light heirs should the canal company ever cease to use it for transportation purposes.

Mexican Railway and Industrial Notes.

Modifications of the Custom House Laws.

DURANGO, April 20, 1904.—Following the intimation given in his address to Congress, in reference to contemplated amendments to the rules governing custom house practice, the President has issued a decree in which a number of changes are made in the ordinances affecting imports. These amendments are in the direction of greater liberality and are intended to facilitate the work of the customs officials. Article 1 provides for the collection by the custom houses of from 1.50 to 2 per cent. in addition to the total duties collected, "for the benefit of the municipalities" in which such custom houses are situated, describes the procedure for the assessment of merchandise imported which is not included in the tariff schedules, the manner of making manifests, &c. Exporters in the United States who so desire can doubtless obtain copies of these new custom house rules by making application to the brokers at the different frontier stations.

Railway Concessions and Construction.

The contract for the construction of the extension of the Chihuahua & Pacific Railway from El Carpio Station to Temosiachic, 86 km. in length, has been given to M. K. Reyan of Colorado Springs and D. M. Dudley of Chihuahua.

Señor Sebastian B. de Mier, Mexican Minister to France, has obtained a concession through his agent to construct a railway from the Hacienda de Atlamaxco to connect with the National, in the State of Puebla. The road will be about 60 km. in length. A limit of five years is set for the construction. The concesison also covers an option to extend the road to Zacatlan, a distance of 30 km., three years being the time limit in this event. Señor Mier is the owner of the hacienda named, and the line is intended to facilitate the shipment of his products.

The Cananea Copper Company, Cananea, Sonora, have been granted a concession for the construction of four lines of railway, as follows: From a point near the San José station of the Naco & Cananea Railway to a point on the boundary line of the States of Chihuahua and Sonora; from the terminus of the preceding line to a connection with the Rio Grande, Sierra Madre & Pacific Railway; from the terminus of the preceding line, at the junction with the Rio Grande, Sierra Madre & Pacific Railway, to a connection with the Mexican Central; from a point on the Naco & Cananea Railway to a point on the Sonora Railway. The company are also empowered to construct a branch from the first named line to the Pilares mining district, and are allowed three years to decide whether they will do so or not. The roads are to be of standard gauge. Thirty km. must be finished within 18 months, and at least 18 km. each succeeding year, 10 years being the time limit of the concession. The company have deposited $69,300 in bonds as a guarantee for the performance of their obligations.

Industrial Notes.

The Naval Construction Company have been organized in the capital, with a paid up capital of $1,000,000, for the purpose of establishing and maintaining a modern equipped dry dock and shipbuilding yard at Frontera, Tabasco. The new concern will take over the business of the company already operating a shipyard at that port. The officers of the new company are Robert G. Gorsuch, president; A. F. Nathan, vice-president; C. A. Young, secretary; J. C. Mordough, treasurer; Abel Gottfried, assistant treasurer; Arthur Gehm, general manager; John I. Copeland, naval constructor, and Robert G. Hart, consulting engineer.

The demand for mining machinery is active. Leading supply houses report large contracts for mill equipments, smelter outfits, pumps, wrought iron pipe, &c.

The Monterey Wire Nail Company's plant, it is reported, has been sold to a syndicate of Pittsburgh men, who have nail factories in the United States. The plant is now in full operation. Just before the new duty went into effect a trainload of wire was received from Pittsburgh. The wire in the shipment is sufficient to run the plant for three months.

A concession has been granted to Señor Francisco Olvera to use for irrigation purposes 200 liters of water per second from the River Tula, in the State of Hidalgo; and a concession has been applied for by George B. Hyde, who desires to utilize the waters of the Zempoala River, in the district of Tetela, Puebla, for electric power in mining operations.

J. J. D.

The Wight & Hyatt Gas Valve.

Those who have had to do with the maintenance of regenerative furnaces appreciate the importance of having an efficient gas valve. The original Siemens regenerative furnace used the butterfly valve, which to-day is the simplest and best where the temperatures are low, but modern practice with hot gas, large furnaces and high speed renders this type useless for gas, although it remains the most available for air reversing. No material has yet been found sufficiently refractory to stand the heat from which a valve can be made that will not leak, and the only practicable scheme is to use iron or steel and keep it artificially cool enough to retain its shape. Experience has

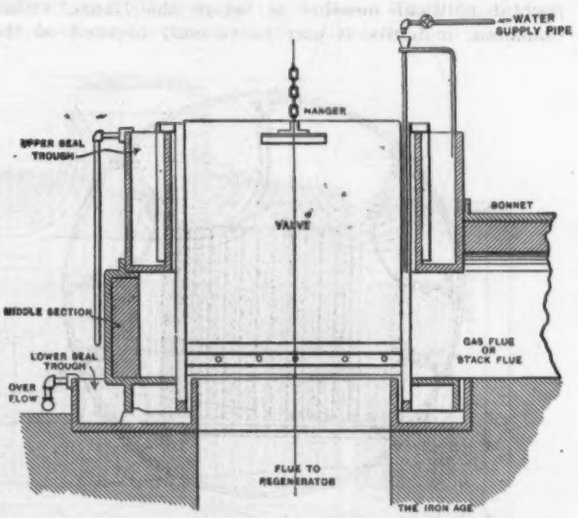


Fig. 1.—Detail Showing Construction of the Valve.

proved that there is much less danger of leakage by the use of a water seal than where dependence is made on machined surfaces, the slightest warping or distortion of which impairs the tightness. The valves at present on the market are open to one or more of the objections that parts of valves are exposed to heat and are not water cooled, that a large surface of water is exposed to evaporation, that where the valve has a horizontal motion it causes the water to splash, or that its parts are not easily accessible for repair and renewal.

In the valve illustrated it will be noted that all the mechanism is outside and accessible, there being no joints, levers, links, rods, shafts, supports nor bearings inside; that the valve is sealed in all positions; that the motion is free, slight and vertical, and that the only water exposed is the ring that the valve seals in. This valve is the invention of Wight & Hyatt, engineers, of Cleveland, Ohio, and is of the unit type—that is, it has a single acting valve for each gas and stack connection of each regenerator. Fig. 1 shows one of these valves in detail. It consists of a double walled cylindrical valve, with a double head near the bottom, and an outside shell depending from the top, the whole moving vertically in a casing which is made up of three sections. The bottom section is a water trough surrounding a port from the regenerator flue, in which the valve seals when closed and supports and seals externally the middle section. The latter is fire brick lined, and has an opening on one side for the stack flue bonnet or gas box. It carries the top section, a circular water trough in which the outside shell of the valve dips, forming an external seal in all positions. The water supply is fed into the valve through a pipe, opening near the bottom, and overflows into the upper seal trough. From this it overflows into the lower

seal trough, and is finally wasted to the sewer. The supply is arranged so that the flow of water is visible.

Fig. 2 shows a set of these valves as applied to the gas regenerators of a furnace. Each regenerator flue has two vertical ports, over one of which is placed the valve controlling the stack outlet and over the other the valve controlling the gas inlet. The two valves are suspended from the ends of a walking beam carried by a bracket, which is supported by the valve casings, and by means of a movable weight is made to incline one way or the other, sealing one connection and opening the other, and *vice versa*. Means are provided for shifting these weights from a convenient point. The illustration shows a valve of the same kind used for the gas regulating, but if desired, of course, an ordinary mushroom regulating valve may be used instead.

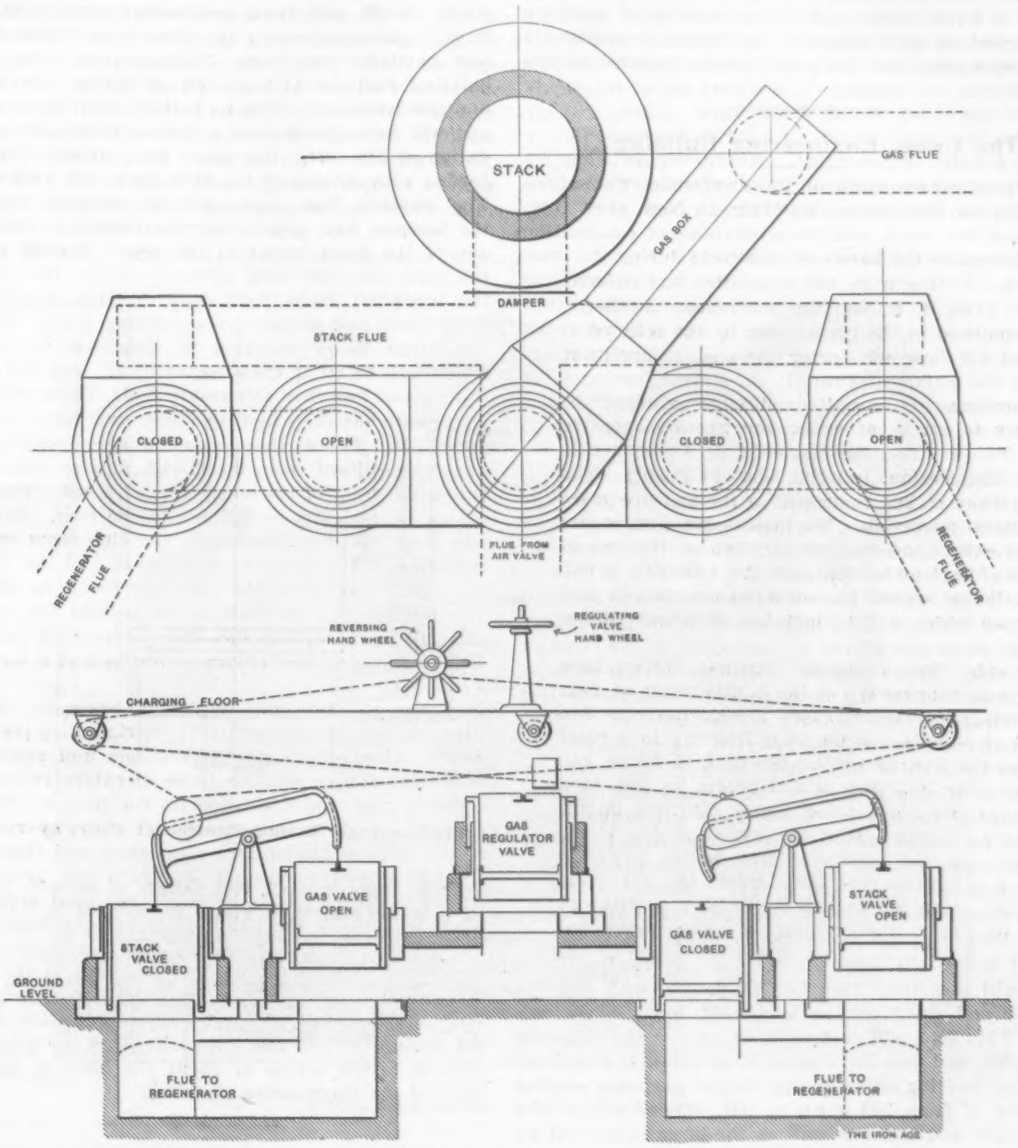


Fig. 2.—Application of the Valves to the Gas Regenerators of a Furnace.

THE WIGHT & HYATT GAS VALVE.

The importance of closing the furnace tight on shutting down over Sunday is not thoroughly understood by many. If the valves can be closed so that there is no stack pull whatever on the furnace it means starting up in several hours less time, as well as adding much to the life of the furnace by avoiding the extreme changes of temperatures, which are so destructive to the brick work. This closing can be done quickly with the Wight & Hyatt valve by simply shifting the weight on the valve that is open to the stack, so that both stack connections will be sealed. The air valve, if of the butterfly type, may be closed by sliding dampers over the regenerator ports.

Pennsylvania Anthracite in 1903.

The year 1903 stands as the high water mark of prosperity in the anthracite coal trade, as the tonnage for that year exceeded by more than 6,000,000 tons that of any previous year, and the demand for coal was so good as to make it possible to dispose of the product at prices which brought a fair return to all concerned in the industry. Some significant figures in connection with the production of Pennsylvania anthracite during 1903 have been collected by William W. Ruley, special agent of the United States Geological Survey, and will be included in E. W. Parker's report on the production of coal in 1903, which is a regular feature of the survey's annual volume on the mineral resources of the United States.

In connection with the large production, it is interesting to note the increase in the shipments of the small sizes of coal during 1903 over those of previous years. This is especially noteworthy on account of the opinion generally expressed at the close of the anthracite strike that bituminous coal had largely supplanted anthracite for steam purposes, and would continue to hold this trade to the exclusion of the small sizes of the latter product. On the contrary, however, the consumption of these smaller sizes of coal increased 2,468,694 tons in 1903 over 1901. It would seem that the only cause which would seriously affect the prosperity of the anthracite business is the general condition of the entire country.

It is also of interest to note an increase of 15 cents in the average value per ton for coal at the mines. The total production was 66,351,713 tons, valued at $152,036,448. The average price per ton was $2.50; the number of men employed was 150,483, and the average number of days that each man worked was 206.

The classification of the product of the Bernice field, in Sullivan County, is a matter of some contention. The fracture of the coal and some of its characteristics are more like those of some bituminous or semianthracite coals than strict anthracite, but on account of its high percentage of fixed carbon and low percentage of moisture it is classed as anthracite by the Second Pennsylvania Geological Survey, and the product is so included in this report.

The Union Engineering Building

The preliminary work of the Conference Committee on the Union Engineering Building, in New York City, was closed last week, and the programme of competition will be placed in the hands of architects during the present week. In this work the committee has enjoyed the advice of Prof. W. R. Ware as professional adviser. The plans submitted in the competition by the selected architects and by those who enter the open competition are to be in the hands of Prof. F. R. Hutton, secretary of the committee, by June 15, and it is expected shortly thereafter to arrive at a decision as to the preferable plan.

The Engineering Building, on Thirty-ninth street, about midway on the north side of the block, will occupy about 10,500 square feet, exclusive of the 15 feet open space reserved under the city ordinances, the outside dimensions of the land being about 125 x 100 feet. To the east of the building Andrew Carnegie has bought and reserved a residence which will be maintained at its present elevation so as to protect the air and light of the building on that side. There will be at the top of the building three stories held for the use of technical societies invited to participate in the benefits of the building. Three other similar floors will be reserved, one each for the American Institute of Electrical Engineers, the American Institute of Mining Engineers and the American Society of Mechanical Engineers. These floors will make ample provision for offices and each will have a large, handsome reception room, as well as board and committee rooms. Below these will come the library, virtually a double floor, although the committee will entertain plans placing the library at the top of the building.

Next below will come a large main auditorium floor, which will seat from 1200 to 1500 people, with 1000 on the floor and about half as many additional in the galleries. This floor will preferably be as near the sidewalk as possible, and may have above it or below it a number of smaller meeting rooms having similar purposes, seating audiences of from 500 down to 100. There will be six such rooms, and these as well as the large room will all be thoroughly equipped with gas, compressed air, steam, water, electricity, &c., for the conduct of experiments and demonstrations. There will also be lounging and smoking rooms, and provision will also be made for special banquets by outside caterers and the serving of occasional collations. The floor on the street level will be appropriated mainly to administrative purposes, with three coat rooms capable of taking care of 1500 garments at once, a ladies' dressing room, a bureau of information, public telephone and telegraph offices, the post office, and sales department, and shipping and receiving offices for books, publications, &c. Below this floor, from which probably a fine stairway will lead to the auditorium above, will come the basement and sub-basement, with provision for storage purposes, machinery, coal and operative apparatus. There will be three elevators in the building, of large capacity, one being able to take care of freight.

The library floor will be laid out so as to accommodate not only the present consolidated libraries of 50,000 volumes, but a well rounded comprehensive collection of six or eight times that number. There will also be a number of reading and reference rooms on that floor. For the purposes of the Engineering Building and the Engineers' Club, regarded as separate structures, it is proposed to expend about $1,000,000, leaving the other $500,000 for tearing down of old buildings, excavation, architects' and engineers' fees, machinery, elevators, lighting fixtures and the equipment of the library and auditorium. As to the architecture of both buildings, it is the expressed wish of Mr. Carnegie that it should be simple and dignified, something that will be as good in style a hundred years from to-day as now.

The Engineers' Club, with a frontage of 50 feet and a depth of 100, will front on Fortieth street and Bryant Park, looking across to the New York Public Library, now partially completed. It is proposed that the club building shall be 11½ stories, including also basement and sub-basement. The half story will be on the roof and will have the kitchen and some rooms for accommodation of the help, the other part constituting a roof garden with outlook on the little park and Hudson River. The eleventh floor below will be occupied entirely by the banquet hall and its service facilities, and will be one of the finest rooms in the house, looking across to the park and New York Library. Below this will come the breakfast room floor, with a large breakfast and lunch room and several private dining rooms. Next will come four floors occupied by bedrooms for members. There will be 60 of these rooms in all, and the smallest is to be not less than 150 square feet. There will be generous bath facilities and all rooms will have outside air and light. Below these sleeping accommodations will come the billiard room floor, with a large billiard room across the front of the house and with board rooms, committee rooms, card rooms, &c., in the rear. Next below will come the floor containing the club room or general reception and meeting room in front and the library in the rear, these being the only two rooms on that floor. The next or ground floor, raised several feet above the sidewalk, will contain the office, large coat rooms, general reception rooms, telephone booths and a large handsome *café*.

Below the sidewalk will be a basement and sub-basement containing machinery, refrigerating plant, storerooms, wine cellar, steward's rooms and sundry other facilities. There will be three elevators running from cellar to roof, one with capacity for freight. There will also be a main grand ornamental stairway running up to the level of the billiard room floor and there will be service stairways throughout, which can also be used by the members. It is believed that good architectural plans will enable the buildings to present from the Bryant Park front a harmonious and handsome *ensemble* above the roofs of the private dwellings in the vicinity. A covered areaway across the light well between the two buildings will render intercommunication easy, and the committee will also entertain plans throwing a light, artistic bridge across at about the level of the library floor of the Engineering Building.

The Production of Steel in Germany.—The returns of the German steel works, six small plants being estimated, show the following totals of production:

	Metric tons.		
I. Ingots:	Acid.	Basic.	Total.
a. Bessemer	435,327	5,473,195	5,908,522
b. Open hearth	132,693	2,628,544	2,761,237
II. Steel castings	45,379	86,377	131,756
Totals 1903	613,399	8,188,116	8,801,515
Totals 1902	517,996	7,262,686	7,780,682
Totals 1901	465,040	5,929,182	6,394,222
Totals 1900	422,452	6,223,417	6,645,869

It will be noted that Germany increased its production by over 1,000,000 tons of steel in 1903.

The report that the next bimonthly settlement of the bar iron scale, which will be arranged about May 10, would result in an increase in the puddling rate from $5 to $5.25 a ton is untrue. The base rate at the present time is 1.3 cents, which makes boiling $5.25 a ton. From this it is practically certain there will be no increase in the boiling rate for May and June when the next settlement is made.

Large Downtown Structures in Chicago.

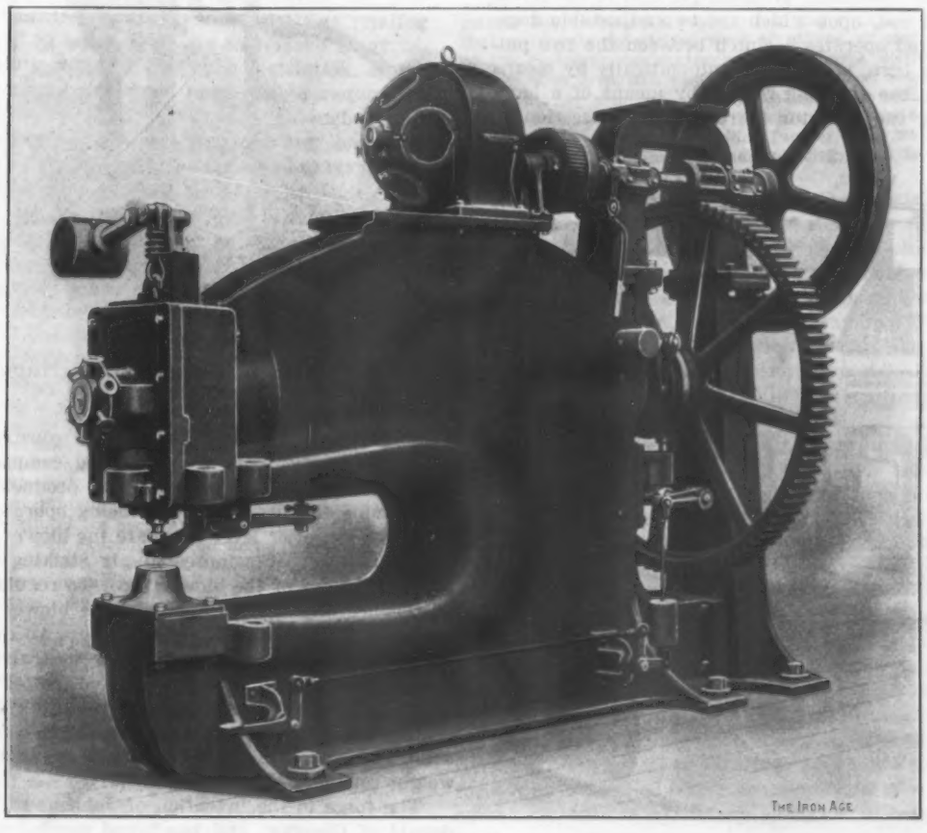
The need for greater office building facilities in the congested downtown district of Chicago is being met by the construction of five large buildings which have been noted in these columns from time to time. It is interesting, however, to summarize these buildings in terms of the steel required for them. The steel for all five of the buildings has been placed with the American Bridge Company. Wells Brothers have secured the contracts for four out of the five buildings, as follows: The Ryerson Building, Adams street and the Chicago River, calling for 1300 tons of structural steel; the Adams Building, at Adams and State streets, 2500 tons; the Chicago Savings Bank, also known as the Otis and the Madison Building, at Madison and State streets, 1400 tons, and the building being erected by Otto Young at the corner of Madison street and Wabash avenue, on the old St. Mary's Block, which will require 4000 tons. The George A. Fuller Company have just placed the contract for 4500 tons of structural steel with the American Bridge Company for the office building to be erected by the Chicago & Northwestern Railroad at Franklin street and Jackson boulevard. Altogether these five buildings require over 13,000 tons of structural steel, besides a very large tonnage of castings and other iron and steel, and their construction is giving an impetus to the building interests of the city of Chicago that is welcome at the present period of comparative depression.

Milwaukee members of the American Society of Mechanical Engineers met Thursday evening, April 21, at the Hotel Pfister, to perfect the organization of a local branch of the national organization. This is one of the first branches to be organized under the suggestion of the parent society at its last convention that branches be formed in different cities. A constitution, reported by M. A. Beck, George P. Dravo and Euclid Worden, was adopted.

The Crocker-Wheeler Company, Ampere, N. J., will on May 10 open a branch office in the Hibernia Bank Building in New Orleans. W. P. Field of the St. Louis office of the company will be the representative in charge. Although there are 15 Crocker-Wheeler branches from Boston to San Francisco, including St. Louis and Atlanta, the establishment of this new office has become necessary in order to accommodate the steadily increasing market for electric machinery in the South and Southwest.

A Hilles & Jones Punch and Shear.

At the St. Louis Exposition the punch and shear shown in the accompanying illustration will be exhibited by the Hilles & Jones Company, Wilmington, Del. The machine has a deep throat, and is equipped with a 10 horse-power Crocker-Wheeler motor mounted overhead and directly connected to the pinion shaft through cut gearing and a friction clutch. This clutch allows the motor to be run to full speed before starting the fly wheel, and provides a slipping point in case the machine should become stalled. The sliding head is controlled by an automatic stop. The throat is 54 inches deep, and the capacity is equivalent to the punching of a hole 1¾ inches in diameter in a plate 1⅛ inches thick or the shearing of 1⅛-inch plate. All in all, the machine is a good example of a modern punch and shear for heavy plate work.



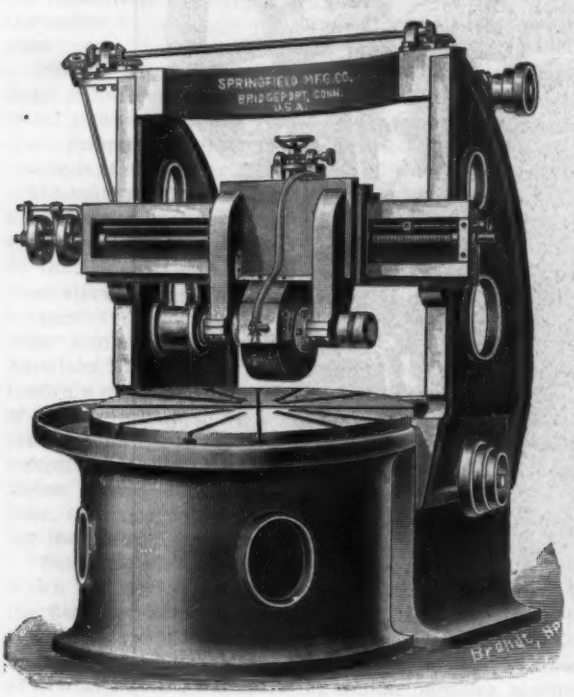
A HILLES & JONES PUNCH AND SHEAR.

A submarine signaling system invented by Professor Gray and Arthur J. Mundy, which is expected to reduce the danger of colliding at sea, has recently been tested. By means of this system the master of a vessel, standing at the wheel, can, it is claimed, have instant knowledge of the approach of another ship, even when 6 to 10 miles separate the two, and will also know when he is nearing perilous shoals or reefs. The apparatus looks much like an ordinary house telephone, without the transmitter. The connection between the sending and receiving ends is wireless under the water, the sea itself constituting the transmitting medium. In sending signals a bell is sunk 15 feet, and the wires of the receiving station run for an equal distance beneath the hull. The receiving instrument picks up the vibrations when the sunken bell is tolled. The secret of the invention is said to lie in the chemicals used in the receiver.

The Springfield Rotary Surfacer.

The purpose of the rotary surfacer shown in the accompanying illustration is to provide means for accurate surface grinding, particularly on objects having surfaces which are open or partly in relief, such as engine and pump valves, textile plates and irregular shaped dies. The arrangement is such that the broad faced emery wheel employed scores the surface of the work at innumerable angles, as a consequence of the revolving of the table and the oscillating of the wheel from side to center. This overcomes the tendency when grinding broken surfaces to grind the inner edges more than the body of the work, which oftentimes results in these edges being from one to two thousandths of an inch lower than the centers of the surface.

The table is supported on V-ways, and is operated by a worm and worm gear to prevent chattering. The wheel head reciprocates from side to center of the rail either by hand or automatically by means of a screw driven in reverse directions by two pulleys, one having an open belt and the other a cross belt. Running parallel to the screw is the shipping rod, upon which are two adjustable dogs. The shipping rod operates a clutch between the two pulleys, which, in turn, is operated automatically by means of the dogs on the shipping rod, or by means of a hand lever, enabling the operator to reverse the direction of



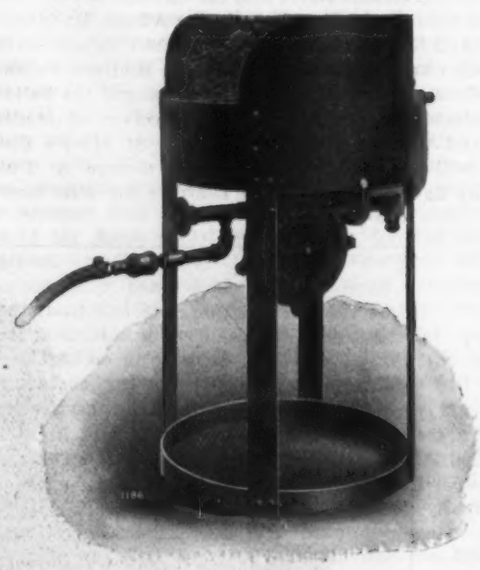
THE SPRINGFIELD ROTARY SURFACER.

the feed at will. This is a great convenience where one part of the surface is elevated, making it desirable to reduce the work at that point to an approximate level with the remainder of the surface before doing the final surfacing. When desired the screw may be thrown out of use entirely by means of a pin at the back of the cross rail, which locks the clutch in a neutral position between the pulleys, so that the wheel will grind at one point only. A crank fitting on the squared end of the screw may also be used, and the feed accomplished entirely by hand. This is a useful feature where a very slow feed is desired, as, for instance, when grinding up to a shoulder.

The cross rail which carries the wheel head is operated by elevating screws, and the wheel head may also be raised by its own elevating screw, attached to which is a micrometer, allowing as small a feed as one-eighth of 1-1000 inch if desired. Means are provided for keeping the wheel and work flooded with water to prevent overheating. The machine is claimed to be exceptionally economical for the grinding of square, segmental or round disk dies. It is furnished in three sizes, to grind work 24, 40 and 60 inches in diameter, and is manufactured by the Springfield Mfg. Company of Bridgeport, Conn.

The Macdonald Forge.

The Macdonald forge illustrated herewith represents another clever adaptation of compressed air in devices for the saving of labor. The forge is principally utilized for heating rivets, and is very handy and efficient in con-



A NEW RIVET FORGE, OPERATED BY COMPRESSED AIR.

nection with any general outside steel construction work where pneumatic tools are used and compressed air is therefore available. The blower for producing the blast for blowing the fire, instead of being operated by a boy through a wheel or lever to rotate the blower, is revolved by a small jet of compressed air striking against the wings or blades of the blower fan. To regulate the blast on the fire any desired speed of the blower fan can be obtained by adjusting a needle valve. An ordinary coal fire is used. The amount of compressed air required to operate the forge is from 5 to 7 cubic feet of free air per minute, whereas forges using compressed air direct on the fire are said to require from 25 to 30 cubic feet per minute. The diameter of the hearth is 20 inches, and the weight complete 100 pounds.

The forge is the invention of John and Thomas Macdonald of Glasgow, and has found much favor in Great Britain and the Continent, where it is in general use in the shop yards, bridge shops, boiler shops and general engineering plants. The Ingersoll-Sergeant Drill Company, 26 Cortlandt street, New York, have obtained the sole right to manufacture and sell the forge in this country and Canada.

Rates on pig iron from Ohio River crossings to Chicago, Detroit, Indianapolis and the Indiana gas belt territory were reduced on April 25. The rate to Chicago and Detroit drops from $1.60 to $1.40 a ton, and to the other points the rate will be $1.

On April 16 Mary Furnace of the Ohio Iron & Steel Company, Lowellville, Ohio, made 401¾ tons of pig iron in 24 hours, the largest output in one day in the history of the furnace. The total output of the stack for the week ending April 16 was 2630 tons.

A number of molders at the works of the Exeter Machine Company, West Pittston, Pa., have struck because the company refused to restrict the number of apprentices as demanded by the Molders' Union. It is expected that the trouble will shortly be adjusted.

To Amend Patent and Trade-Mark Laws.

Two Comprehensive Measures Introduced in Congress.

WASHINGTON, D. C., April 26, 1904.—Two important measures providing for amendments to the existing patent and trade-mark laws have been introduced in the House of Representatives. One of these bills provides a new method of procedure for securing an extension for a patent about to expire, and is introduced by Representative Tawney of Minnesota; the other bill provides a comprehensive revision of the law regarding the registration and protection of trade-marks, and is introduced by Representative Southwick of New York. While neither of these bills will be enacted at the present session, they are being carefully examined by the House Committee on Patents, and will be taken up early in the next session in connection with several other important measures relating to patents and trade-marks, the purpose of the committee being to revise the laws relating to these subjects in such a way as to remove many incongruities resulting from patchwork legislation in the past. The committee also hopes to provide a method for protecting patents and trade-marks used throughout our insular possessions and to establish a better basis for agreements with foreign countries for the mutual protection of inventions, trade-marks, &c.

To Extend Expiring Patents.

The Tawney measure, providing a method of extending patents about to expire, embraces important amendments to sections 4924 and 4927, Revised Statutes. The first section referred to now applies only to patents granted prior to March 18, 1861. As amended, this section will read as follows:

Section 4924. That where the patentee of any invention or discovery the patent for which was granted within 17 years and 9 months preceding the date of the passage of this act shall desire an extension of his patent beyond the original term of its limitation, he shall make application therefor, in writing, to the Commissioner of Patents, setting forth the reasons why such extension should be granted; and he shall also furnish a written statement, under oath, of the ascertained invention or discovery, and of his receipts and expenditures on account thereof, sufficiently in detail to exhibit a true and faithful account of the loss and profit in any manner accruing to him by reason of the invention or discovery. Such application shall be filed not more than 9 months nor less than 90 days before the expiration of the original term of the patent, and no extension shall be granted after the expiration of the original term.

Section 4927 now provides that if the Commissioner of Patents considers the application meritorious he shall extend it for a term not to exceed seven years, provided that the period of the extension added to that of the original patent shall not exceed 21 years. The Tawney bill proposes to modify this section in several very important particulars so as to read as follows:

Sec. 4927. That the Commissioner shall, immediately after the receipt of said application and of the report of the principal examiner, as provided for in section 4926 of the Revised Statutes, refer said application to the Court of Claims (or the Court of Appeals for the District of Columbia) to hear and decide upon the evidence produced both for and against the extension; and if it shall appear to the satisfaction of the said court that the patentee, without neglect or fault on his part, has failed to obtain from the use and sale of his invention or discovery a reasonable remuneration for the time, ingenuity and expense bestowed upon it, and the introduction of it into use, and that it is just and proper, having due regard to the public interest, that the term of the patent should be extended, the said court shall make a certificate thereon renewing and extending the patent for a term not to exceed 17 years from the expiration of the first term. Such certificate shall be forwarded to the Commissioner of Patents to be recorded in the Patent Office; and thereupon such patent shall have the same effect in law as though it had been originally granted for and including the extended term.

The principal changes provided in this section as amended include a reference of the application to the Court of Claims or to the Court of Appeals for the District of Columbia and the renewal of the patent for an additional period of 17 years, making an aggregate of 34 years instead of 21 years, as at present. The practical effect of the passage of the Tawney bill will be the filing of a large number of applications for extensions. The reluctance of the Commissioner of Patents to grant extensions under the present laws has prevented the filing of many applications, and parties desiring extensions have usually preferred to apply to Congress, which has rarely granted the desired relief.

Extension of Trade-Mark Laws.

The Southwick bill, providing for the registration and protection of trade-marks, extends the present laws in two important particulars: 1, So as to embrace all trade-marks used in interstate commerce, which are not now protected; and, 2, those which may be employed in commerce with the insular possessions of the United States. An anomaly of the present law is the fact that it affords protection to such trade-marks only as are used in commerce with foreign nations or with the Indian tribes, and does not cover the much more important class employed in trade between the States. The measure further provides the following specifications as to trade-marks which may be registered:

That any distinct name, word, phrase, symbol or device, or the name of a deceased person or character famous in history, fiction or literature, or the name of a living celebrity with the consent of such person, by which the origin or ownership of goods can be distinguished, shall be considered proper subject matter for trade-mark registration under this act; provided, that no merely descriptive word or phrase, or merely the name of the applicant (unless such name be in a distinctive shape, or consist in a written signature in original or *fac-simile* of the applicant), or a merely geographical name or term shall *prima facie* constitute a trade-mark which may be exclusively appropriated under this act; provided further, that no public arms or decorations, including the national flag, shall be registerable under the provisions of this act.

An important feature of the bill materially reduces the present fees for trade-marks. Under the schedule of charges a filing fee of $10 is levied for each original application for registration or for a renewal of registration. The fee to be paid for an appeal from the examiner to the Commissioner of Patents is $15, and a like charge is made for an appeal from the decision of the examiner in charge of interferences, awarding ownership of the trade-mark, to the Commissioner of Patents.

Resident Representatives Required.

The bill requires that every applicant for registration of a trade-mark not domiciled in the United States shall designate by a notice, in writing, filed in the Patent Office, some person residing within the United States on whom process or notice of proceedings affecting the right of ownership of the trade-mark may be served. An interesting feature of the bill provides for the re-enactment in an amended form of section 11 of the Dingley Tariff act, which stipulates that no article of imported merchandise which shall copy or simulate the name of any domestic manufacture or manufacturer shall be admitted to entry at any custom house of the United States. To aid the officers of the customs in enforcing this prohibition any domestic manufacturer, or any foreign manufacturer who is entitled under the provisions of a treaty or agreement between the United States and his country to the advantages accorded by law in respect to trade-marks and commercial names, may require his name and residence, and a copy of the certificate or registration of his trade-mark to be recorded in the Treasury Department; and thereupon the Secretary of the Treasury shall cause one or more copies to be transmitted to each collector or other proper officer of the customs. The filing of these copies in the various custom houses is designed to enable prompt and accurate comparison with any similar marks on imported merchandise. This feature of the Dingley law has already been invoked by American manufacturers of cutlery and other articles to prevent the importation of foreign goods intended to be sold under domestic trade-marks.

The proposition to transfer the Bureau of Trade-Marks from the Patent Office to the Department of Commerce and Labor is receiving considerable attention, and is likely to be recommended by the President in his next message to Congress. W. L. C.

Richard H. Pierce of Boston has been appointed chief engineer to take complete charge of the power plant at the St. Louis World's Fair. He was the unanimous choice of the 97 exhibitors whose machinery constitutes this plant. Mr. Pierce served as consulting engineer of the Columbian Exposition and also for the Chicago City Railway Company.

Notes from Great Britain.

An Advancing Market.

LONDON, April 16, 1904.—The event of the week has undoubtedly been the advance of 5 shillings per ton on unmarked bar iron. This took place at the Birmingham quarterly meeting, where a better spirit was found to prevail than has been the case since the middle of last year. I commented recently on the improved position of pig iron; this week the improvement is extended to billets and sheet bars; one way and another it is evident that buoyancy has at last come to what looked very much like a distracted market. As a result of the advance in Middlesbrough pig, Midland prices have been brought up to the standard quotations, and 44 to 45 shillings have been realized for Northampton, and in some cases as much as 47 shillings 6 pence was asked for the best qualities of Northamptonshire forge iron. The advance in pig iron generally is one of the features of the market.

Returning to the finished iron branch, I have once or twice recently indicated the possibility of the unmarked bar makers coming together and reforming, or, to be more correct, revitalizing, the Unmarked Bar Association. The general committee meeting was held this week, and the result was an announcement posted in the Birmingham Exchange that unmarked bars had been advanced 5 shillings per ton. The possibility of reconstituting the Unmarked Bar Association on stronger lines was discussed. It is said that some of the members are in favor of establishing a pooling arrangement.

In some of the other departments of the finished iron trade the same brighter spirit prevailed. The Gas Strip Manufacturers' Association found matters in good trim, but decided not to alter prices for the present. The Small Iron Makers' Association fixed the basis for ⅜ rounds at £6 5s. The galvanizers met in an equally hopeful spirit. It was stated that but for some falling off in the South African demand a new record would have been established. As a matter of fact, the South African demand is once again making itself felt, and large orders have either been delivered or are about to be given out for the provision to be made for housing Chinese labor. In the galvanized market, however, India is the best customer. The galvanizers also decided to leave prices unaltered, but they indicated pretty clearly that if the market holds prices will be advanced. The black sheet makers seem to have been the exception, for they reported their branch of the industry as lagging behind. Tin plates show a firmer tone.

The raw steel branch benefits or corresponds with the improvement in the iron departments. The absence of American and German competition continues, with the result that English makers are steadily filling their order books, and on Thursday an advance was made of 2 shillings 6 pence on quotations for billets and sheet bars. Some business has been booked at 90 shillings, but on ordinary lines a less price is accepted. German competition is at the moment slightly felt in joists and girders, but in general structural engineers are having a good time, owing to the increased demand for shipbuilding steel and the arrival of some orders for bridges in South America.

The shipbuilding industry on the Northeast Coast is still thriving, and the Engineers' Union have in consequence made an application for a 10 per cent. advance in wages, to take effect in two months. It may be remembered that some time ago the employers demanded a 10 per cent. reduction, but owing to the improvement in trade the notice was withdrawn. The men now contend that the improvement in trade warrants the advance.

On the other hand, the accountant's certificate received last Saturday in Middlesbrough of the average net selling price of Cleveland pig iron for the past three months being £1 2s. 3.97d., or 1 shilling 9.4 pence lower than in the previous period, wages at the Cleveland, Durham and Tyneside furnaces will be reduced 2¼ per cent., and there will be a reduction of 2 per cent. in railway rates for the carriage of iron making materials. These figures, of course, antedate the improvement in pig iron to which allusion has already been made.

But while the improvement in the raw material is now recognized as an important factor in the situation, it is as well to remember that in Lancashire and district, one of our greatest engineering centers, trade is distinctly bad, and the revival of activity felt in the shipbuilding trades has not reached those engineering concerns which make machinery for inland use. The reports which are obtainable from sources representing the engineering trades employers' and workmen's organizations are almost without exception very discouraging both as to the present situation and the prospects for the future. Most engineering firms are but indifferently supplied with orders, and generally there is comparatively little new work coming forward.

The Present State of British Shipbuilding.

Lloyd's returns, which are to hand this week, indicate clearly enough that the shipbuilding industry shows marked improvement. Excluding war ships, there were 398 vessels, of 988,664 tons gross, under construction in Great Britain at the close of last quarter. This shows 90,000 tons more than at the end of December, 1903. Compared, however, with the total reached in September, 1901, the highest on record, the figures show a reduction of 425,000 tons, or 30 per cent.

The Output of Spanish Iron Ore.

It is gratifying to learn from the returns of the output of Spanish iron ore that, notwithstanding the gradual diminution in the yield of the Bilbao mines, the deficit is being more than made good by the steady development of the newer mines in other parts of Spain. Last year the production of the whole country was 8,478,600 tons, against only 8,063,555 tons, the increase in 1903 being 415,045 tons. The output in the Bilbao district was 4,760,000 tons in 1903 and 5,059,405 tons in 1902, showing a decrease of 299,405 tons. It appears that the share of the entire product exported to the United Kingdom was considerably smaller in 1903, the total quantity being only 4,947,028 tons, against 5,377,705 in 1902. The return shows that the whole of the increased production was sent to Holland, but probably most, if not all, of the shipments entered as for Holland were destined for German blast furnaces.

Babcock & Wilcox, Limited.

During the last few years boiler making has not been a very prosperous business, but Babcock & Wilcox Limited, the English company connected with the American company of the same name, has not been affected, and their report for 1903 is certainly an inspiring document to their own shareholders, who receive the handsome dividend of 17 per cent. Since the original concern was floated in 1891 to acquire the New York company's Glasgow offshoot and the patent rights of the world outside America and Cuba, profits, with some minor fluctuations, easily explainable by special commercial conditions, have advanced almost continuously, and the ordinary dividend has never been below 10 per cent. per annum, while on two occasions it has risen to 20 per cent. The capital now consists of £100,000 preference and £530,000 ordinary shares.

Profits and Dividends.

Very disappointing is the report of Willans & Robinson, Limited, engine builders, for the half year ended December 31, the operations of the company having resulted in a loss. No dividend is to be paid either on the preference or on the ordinary shares. Owing, on the one hand, to depression in trade, and, on the other, to increased competition, there has been a serious falling off in orders as well as on the prices obtainable. As a matter of fact, however, a profit of £11,772 is made upon the Rugby Works, but against this has to be set a loss of £22,040 upon the steel works at Queensberry, which are to be closed as soon as existing orders can be completed. Economies are the order of the day.

The Park Gate Iron & Steel Company pay 6 per cent., the same as last year.

Ibbotson Brothers, steel manufacturers of Sheffield, are paying an interim dividend of 5 per cent. for the half year ended December 31.

Screw Threads and Limit Gauges.

The Engineering Standards Committee have for some time past been considering the question of screw threads

and limit gauges, and a large amount of information has already been collected by the committee. With a view to obtaining a more general expression of opinion, it is proposed to hold a conference at the Institution of Civil Engineers on Tuesday and Wednesday, April 19 and 20, to give the committee an opportunity of meeting the leading mechanical engineers of this country, who are directly affected. It is proposed to ask for evidence on screw threads from users of screws, makers of screws and makers of tools for making or gauging screws. A series of questions has been drafted under these three heads, as follows: Whether the present Whitworth and B. A. screws are sufficient for all practical purposes; questions affecting the interchangeability of screws; questions affecting the angle, pitch, thread form, &c. of screws; systems of gauging screws. Evidence will also be taken as to whether it would be feasible to lay down a series of standard limits for various classes of work, and, if so, what these limits should be. The questions as to whether the male or female gauge be taken as a basis for standardization will also be discussed.

Basic and Acid Rails.

The railroad authorities of this country are pondering the essence of a pamphlet recently issued by Cammell, Laird & Co., which seeks to show that the breakages of steel rails have been more numerous on the Northeastern Railway than on any other part of the British railroad system. The Northeastern Company use a certain quantity of basic steel rails produced in or near Middlesbrough. The pamphlet argues that the fewest breakages take place on the Midland system, which uses the acid material supplied by the Penistone Works. It is, of course, quite incidental that the Penistone Works are owned by Cammell, Laird & Co., but none the less they seem to make out something of a case. S. G. H.

OBITUARY.

JOHN L. WEEKS.

John L. Weeks, treasurer and general manager of the American Steam Gauge & Valve Mfg. Company, Boston, Mass., died suddenly on April 2. Mr. Weeks was born in Ohio in 1864. His first business connection was with the Whitman & Barnes Company, Akron, Ohio. From there he went to Chicago, where he began his connection with the American Steam Gauge & Valve Mfg. Company as an agent. Soon afterward the company established a Chicago branch and Mr. Weeks was made its manager. Five years ago he was called to Boston to become the treasurer and manager of the company and held these offices up to the time of his death. Under his management the company's business developed very rapidly. When he went to Boston the factory was located on Chardon street. A year later it was removed to Jamaica Plain to a plant double the size of the old one. But the business outgrew the larger quarters, and in November, 1903, it was removed to the present plant on Camden street, Boston, where four times the room was available. Mr. Weeks' associates in the business attribute to his business skill and energy a large share of the credit for this very prosperous and rapid growth. He leaves a widow and one child.

J. D. SMITH.

James D. Smith, secretary and treasurer of the J. D. Smith Foundry Supply Company, Cleveland, Ohio, died on April 19, aged 45 years. Mr. Smith was born in Cincinnati, September 5, 1858. Shortly before his twenty-first birthday he started in business with the Fitzmorris & Smith Foundry Facings & Supply Company, Cincinnati. This company were later reorganized as the J. D. Smith Foundry Facings & Supply Company. Further change was effected in 1899, when he united his business with the Cleveland Facing Mill, of which S. H. Chamberlain was the head, and removed to Cleveland. The company have since been known as the J. D. Smith Foundry Supply Company. The business has been very prosperous, and Mr. Smith was widely and favorably known among foundrymen throughout the United States. He was at one time a member of the Board of Education of Cincinnati. He was a prominent Mason and a Noble of the Mystic Shrine. He leaves a widow, a daughter and three sons. The two older boys, Pierce and James, were associated with their father in business. The interment took place at Cincinnati.

NOTES.

JOHN REILLY, president of the United States Metallic Packing Company and the Millwood Coal & Coke Company, and vice-president and treasurer of the American Locomotive Sander Company, died April 20 at his home in Philadelphia, aged 69 years. He was born in Central Pennsylvania and represented Blair County in the Forty-fourth Congress. In early life he took up railroad work and was connected for 31 years with the Pennsylvania Railroad Company. He rose to the position of superintendent of transportation, which he held until his resignation in the early 80's.

EDWARD HOLMES, president of the E. & B. Holmes Machinery Company, Buffalo, N. Y., died April 12, after a long illness, from a complication of diseases. He was born at Stratford-on-Avon, England, July 4, 1816, and came to this country with his parents when 5 years of age. In 1840 he entered the lumber business in Lancaster, N. Y., and was joined soon afterward by his brother Britain Holmes. They prospered and 12 years later they moved to Buffalo, where the business grew to be one of the largest in the city. In 1858 they began to manufacture machinery. Their output was barrel making and cooperage machines, and the establishment became one of the leading industries of Buffalo. Mr. Holmes was one of the oldest and most respected business men of Buffalo and took an active part in all movements for the public welfare.

JOHN HONE MATTHEWS, for many years secretary and treasurer of the Bridgeport Copper Company, died April 13, at his home, in East Orange, N. J., from an accident while riding a bicycle. Mr. Matthews was in his fiftieth year. He was identified at the time of his death with a number of mining and other business interests in New York City, and was actively engaged in religious and philanthropic work.

DAVID LEFEVER, for many years an iron manufacturer at Shippensburg, Pa., died April 13 at Centreville, Cumberland County, Pa., aged 82 years.

National Metal Trades Association Notes.

CINCINNATI, OHIO, April 26, 1904.—(*By Telegraph.*)—The Administrative Council of the National Metal Trades Association are contemplating the appointment of an assistant to Commissioner Du Brul, to whose shoulders the duties of the office can gradually be shifted. This is in accordance with a request from Mr. Du Brul, whose private business will demand his entire attention within the next year. Press reports to the effect that Mr. Du Brul had resigned are inaccurate. Reports from Memphis indicate that the machinists' strike is about over, very few men being necessary to complete the force in the shops. The same is true of the boiler makers' strike in Chattanooga. Reports from that point dated April 25 state that firms there have had plenty of men for some weeks. Another outbreak of violence occurred in Quincy, Ill. One of the nonunion men was shot at as he was passing into his own home. Demands have been presented to the St. Louis Metal Trades Association by the blacksmiths and helpers, machinists, handy men and pattern makers. Most of these demands contain the following clause: "Union men reserve the right to refuse to work with nonunion men." Reports from Chicago indicate that the brass workers' strike, which affected all the members of the Chicago Brass Manufacturers' Association, is about on its last legs. The Chicago Metal Trades Association has established a labor bureau, and is fast getting into good running order. The union machinists at the Blakeslee Mfg. Company, Duquoin, Ill., are on a strike, demanding a closed shop. The matter is in the hands of the National Metal Trades Association. Reports from Pittsburgh indicate a poor outlook for men out of employment. This condition seems to be more accentuated in Pittsburgh than anywhere else.

The National Machine Tool Builders' Association.

(*By Telegraph.*)

CINCINNATI, OHIO, April 27, 1904.—At the semiannual meeting, now in progress in this city, the National Machine Tool Builders' Association has again taken a firm stand against the reduction of prices. This action will put an end to a considerable amount of speculation among purchasers of machine tools, who for a number of weeks have been awaiting this decision with great interest. The action will doubtless come somewhat as a surprise to many purchasers who have confidently expected that the machine tool builders could no longer hold their strong position in maintaining prices in the face of the decreased demand.

Many members of the trade thought that there would be a reduction in at least some of the lines represented by the products of the members of the association. The latter, however, showed a remarkable degree of faith in the position which they assumed in New York last November, when conditions were precisely the same as they are at present, and when a reduction of prices would have had just as much justification as at present. They were a unit for the maintenance of prices. The feeling exists among the members that they have weathered the worst of the storm and withstood it successfully and that the experiences which they gained in the interval have shown conclusively that any deviation from their position would mean a disastrous price war, which would prove ruinous to the industry in some instances and would not bring any substantial benefit in any case.

The last six months have been a most trying period for the association, and while little differences have cropped up in certain lines, the members involved are here showing a desire and perfect willingness to adjust matters along amicable lines rather than do anything which would tend to disturb the incalculable benefits derived from the spirit of co-operation which the organization has already instilled into the machine tool trade.

The policy of dividing the association into groups or committees according to the type of machines built by the various members has proved most satisfactory, and it is by working along these lines that the plan of campaign for the next six months is being formulated. These committees of shaper builders and lathe builders, &c., are now in session discussing the points that have cropped up within the last six months, so that the work of the future can be carried out with greater harmony than ever.

When the meeting was opened by President Lodge yesterday morning the members were on hand in full force and proceeded immediately to dispose of the business before the convention. The entire day was given up to matters interesting the membership as a body, and the sessions were strictly exclusive. The most important proceeding, of course, was the adoption of the resolution reaffirming the stand on the price question. It is as follows:

Whereas, The general condition of the machine tool business of the country for the past six months has not been of a substantial character, but, rather to the contrary, has been even more depressing than it was previous to November, 1903, when our association met in New York, and

Whereas, The cost of production has been substantially increased by virtue of said less business, naturally the result of the universal reduction of the working or producing element, with the fixed charges remaining the same as when shops are running full;

Be it resolved, That our association, in convention assembled, reaffirm the resolution passed at its last convention in New York, the wisdom of which having been proved by experience, and which reads as follows:

The National Machine Tool Builders' Association, in convention assembled at New York, November 10, 1903, declares that there is nothing in the existing conditions to warrant a reduction in prices, and hereby resolves to maintain the present schedule of prices of machine tools.

Secretary P. E. Montanus held the members with an admirable paper entitled "A Review and Argument Showing the Work Done by and the Advantages of Belonging to the Association."

Fred. L. Eberhardt delivered an excellent address on "The Present Status of the Shaper Trade," saying:

It seems to me that the shaper as a machine tool is not only holding its own but is steadily advancing in merit, finding new avenues for work in addition to its heretofore well known multiplicity of uses. I find, in a casual survey of the field, about 20 manufacturers in this branch of the machine business, and am surprised that but seven are now represented in our association, and would strongly urge the members, individually and collectively, to see to it that this condition be altered.

There has been a slight falling off in orders from this country during the past six months, as compared with the last three or four busy years; but this is only temporary, and we expect to see business resume its normal level by the end of the year.

It is to be regretted that there is a disposition on the part of some shaper manufacturers to cut prices the moment there is a falling off in orders. This is not only harmful to them, as it reduces their legitimate profit, but has a bad effect on the business of other manufacturers, as it renders the market unstable, and buyers naturally withhold placing orders until they know whether there is going to be any further reduction in price.

I would suggest that the Committee on Shapers consider the advisability of adopting a system of uniformity of sizes with regard to certain parts, and believe the same would be of great value if adopted.

The committee suggested by Mr. Eberhardt was appointed.

"The Condition of the Upright Drill Trade" was the subject of a paper presented by A. H. Tuechter, which was in part as follows: At the Niagara Falls meeting, in May, 1902, when it was agreed to advance prices 5 per cent., the writer showed his quotations, which had just been advanced this much, and these quotations held until July 1, 1903, when we again advanced our price, and these last quotations still hold. During the recent depression we were approached by practically every dealer and user for lower prices, which we in every case refused to grant, and which we shall continue to refuse on our product. The result has been that we have lost quite a number of orders simply because the other manufacturers did not have backbone enough to uphold their prices. In one week, by actual count, we had 15 reports where orders were placed elsewhere. We had an offer for 8-42 drills from one house which first we declined, but which we eventually secured at our regular price. I simply cite this to show what may be accomplished if the manufacturers remain firm.

To give an idea of some of the reports, which, by the way, are not only reports, but which are facts, we beg to cite a case in Kentucky where we offered a small machine at $115, f.o.b. Cincinnati, which order was taken at $70 delivered in that city by a competing firm. This illustration is just one out of hundreds we get. We do not aim to dictate or say at what price the various manufacturers shall sell their drills, but the writer was in Cleveland within the past week and saw a 24 back geared and power feed drill which is to-day being sold to the dealer for $110, and if there can be any profit in the business at such prices we certainly are unable to find it.

It was my pleasure some time ago to make a trip East in company with two of the most prominent machine tool builders of this city, and in the course of our conversation I asked them what they would judge should be a fair profit on a business of any size, giving them the amount of business which we had done during the past year. They gave a percentage which their business was netting and were honest in their statements. I, in turn, was equally as honest when I told them that our business would not net half of such a profit, and in all candor they stated to me that we certainly were wasting our time in this upright drill business. We believe that the productive capacity of our shop compares favorably with any shop in the business. We hold our expense and our advertising to as close a limit as business will justify; we work harder than almost anybody in the business ourselves, and yet do not accomplish the result we all should look for.

The above report may appear rather gloomy, but it is

based entirely on facts, and finding the conditions to exist in our factory, and knowing positively that prices are cut by others, the conclusion we arrive at is simply this: That the drill manufacturers are not making any money and have nobody to blame excepting themselves. The majority of people absolutely do not know what a drill or a lathe costs, and it is none of their business. It is for the manufacturer to set a price on his goods and maintain it, and we figure that the manufacturer owes it to himself to make a little more than wages out of his business.

As already stated, we will continue to sell our product at the price we are now getting, and we would advise that the drill men get together, and, while this is not a time probably to raise prices, we may regulate them and in some way bind ourselves to maintain them. We are willing to enter into any agreement of this kind which is made strong enough that the guilty one, when caught, will be obliged to pay heavily.

In many cases the question of reduction is all bluff. For a few weeks we have had correspondence with a party in the extreme Northwest, and his letters were certainly wild and woolly. The freight rate to this city amounted to $2.09½. We quoted him a machine at $225, f.o.b. Cincinnati, and he had the nerve to offer us $200, delivered at his station. We declined this order, telling him that it was our privilege to set prices, and that we never asked him what he was willing to give. Just about that time we figured that he certainly would never reply, and in place of this we got his business and a very complimentary letter, in which he told us that we are certainly good fellows and the real thing.

In conclusion we wish to say just a word about marketing and selling upright drills through the dealers. We all have their business and are anxious for it, and it looks like an absolute necessity that the goods now be marketed in this manner. We do not blame the dealer at all if he can secure lower prices and concessions. That is his business and privilege, but if it is done for one it is only a short time when you might do so for all the rest, and immediately you simply give away so much more of your profits. We believe in absolute straightforward dealings and giving the dealer the rock bottom and no more. We could cite case after case where we have been requested for reductions from this source, but which we have always declined. We are ready to compare notes and prices with any of the drill manufacturers and talk straight business with them for the betterment of our conditions along binding lines. We ourselves recommend that at this convention you consider this matter thoroughly and try to come to an agreement by which the work of the association will really become effective and telling. We also think that a meeting once a year would be sufficient, unless a special cause would arise to have a meeting between times.

A resolution was unanimously passed reaffirming the action taken by the association in October, 1902, opposing the selling of product through dealers on a consignment basis.

Secretary Montanus, in his report, showed the association to include 43 members, three of whom are added at this meeting. They are the King Machine Tool Company, Cincinnati; the Ridgway Machine Tool Company, Ridgway, Pa., and the Queen City Machine Tool Company, Cincinnati.

On Tuesday evening the members and visitors were guests of the local members at a banquet given in the Queen City Club. It was a most delightful affair from every standpoint and the local committee, of which H. M. Norris was chairman, was highly complimented upon the success of the occasion. Philip Fosdick added to his fame as a most pleasing and successful toastmaster. The following members and visitors were present:

Wm. Lodge, Lodge & Shipley Machine Tool Company, Cincinnati.
F. E. Reed, F. E. Reed Company, Worcester, Mass.
Enoch Earle, P. Blaisdell & Co., Worcester, Mass.
F. E. Montanus, Springfield Machine Tool Company, Springfield, Ohio.
Henry J. Hendey, Hendey Machine Company, Torrington, Conn.
Philip Fosdick, Fosdick Machine Tool Company, Cincinnati.
J. S. Detrick, Detrick & Harvey Machine Company, Baltimore, Md.
R. K. Le Blond, R. K. Le Blond Machine Tool Company, Cincinnati, Ohio.
Fred. L. Eberhardt, Gould & Eberhardt, Newark, N. J.
P. G. March, Cincinnati Shaper Company, Cincinnati.
Sherman C. L. Schauer, Cincinnati Machine Tool Company, Cincinnati.
Aug. H. Tuechter, Cincinnati Machine Tool Company, Cincinnati.
Joseph Wolf, Hisey-Wolf Machine Company, Cincinnati.
Chas. F. Hiker, Hamilton Machine Tool Company, Hamilton, Ohio.
Geo. F. Stewart, Bradford Machine Tool Company, Cincinnati.
H. H. Klusman, Greaves, Klusman & Co., Cincinnati.
I. B. Doan, American Tool Works Company, Cincinnati.
H. L. Flather, Flather & Co., Nashua, N. H.
B. B. Quiller, Cincinnati Planer Company, Cincinnati.
Lewis H. Morgan, Ridgway Machine Tool Company, Ridgway, Pa.
G. H. Mayer, Cincinnati Milling Machine Company, Cincinnati.
W. H. Burtner, Cincinnati Planer Company, Cincinnati.
Harry Hoeffinghoff, Bickford Drill & Tool Company, Cincinnati.
E. A. Schumacher, Schumacher & Boye, Cincinnati.
Wm. H. Owen, Owen Machine Tool Company, Springfield, Ohio.
D. L. Ballard, Jones & Lamson, Springfield, Vt.
Wm. Greaves, Greaves, Klusman & Co., Cincinnati.
F. W. Boye, Jr., Schumacher & Boye, Cincinnati.
Harry Hoeffinghoff, Bickford Drill Tool Company, Cincinnati.
Robert Clegg, *Iron Trade Review*, Cleveland, Ohio.
G. H. Gardner, *Iron Trade Review*, Cleveland, Ohio.
E. L. Essley, McDowell, Stocker & Co., Chicago.
Fred. W. Schultz, *The Iron Age*, New York.
Chas. N. Hess, W. M. Pattison Machine Company, Cleveland, Ohio.
R. L. Windholz, E. A. Kinsey Company, Cincinnati.
Fred. J. Miller, *American Machinist*, New York.
L. B. Sherman, *Railroad Gazette*, Chicago.
E. Simmons, *Railroad Gazette*, New York.
Geo. C. Montague, Norton Grinding Company, Worcester, Mass.
A. Luchaes, *Machinery*, New York.
Wm. Meacham, New Process Raw Hide Company, Syracuse, N. Y.
Charles Ducas, *Railroad Gazette*, New York.
John N. Reynolds, *Railway Age*, Chicago.
Chas. A. Rassmann, Vonnegut Hardware Company, Indianapolis.
J. S. Bonsall, *American Engineer and Railroad Journal*, New York.

Experiments are about to be carried out in England with refrigerating machinery in battle ships for the purpose of maintaining an even temperature in the magazines. Steam will be raised some days prior to the commencement of the test, in order that the magazines and other compartments may be warmed. The object in view is to maintain a temperature of 100 degrees F. in the magazines. If this can be done, a considerable improvement in shooting is expected, as it will be remembered that naval gunnery has more than once been shown to be affected by the changes in temperature to which the charges of propellants have been subjected.

The hardness of nickel steel below about 15 per cent. of nickel depends upon the proportions of nickel and carbon jointly. Thus, while a steel with 2 per cent. nickel and 0.9 per cent. carbon cannot be machined, a steel with 3 per cent. nickel and 0.6 per cent. carbon can be machined. Rifle barrels made of low carbon steel containing 4.5 per cent. nickel and 0.3 per cent. carbon can, so it is said, be cut with a penknife. Yet this steeel has an elastic limit of 35 tons and a tensile strength of over 40 tons per square inch.

Three atoms of carbon reacting with one molecule of silicon produce one molecule of carborundum and two molecules of carbon monoxide. In the manufacture of carborundum the silicon is supplied by means of a very pure glass sand, made from crushed quartz, and containing about 99.5 per cent. silicon. The carbon is supplied by coke, which is about as pure as can be obtained. For every 10 pounds of carborundum produced 14 pounds of carbon monoxide gas are set free, so that the mixture of sand and coke must be very porous in order to admit of the ready escape of the gas. This porosity is obtained by putting sawdust into the mixture of sand and coke.

Some rough calculations by J. C. Hawkshaw concerning the water power now going to waste are of interest. He says: "Assume a depth of 10 inches of rainfall to flow off each area of land surface, the mean hight of which may be taken as 2250 feet above sea level. Then the water power from the whole surface, falling through the mean hight, would give 10,340,000,000 horse-power in perpetuity. The present yearly output of 225,000,000 tons of coal would give that horse-power for only a little over half a day."

The Iron Age

New York, Thursday, April 28, 1904.

DAVID WILLIAMS COMPANY, - - - - - - - - PUBLISHERS.
CHARLES KIRCHHOFF, - - - - - - - - - EDITOR.
GEO. W. COPE, - - - - - - - - - - ASSOCIATE EDITOR.
RICHARD R. WILLIAMS, - - - - - - - - - HARDWARE EDITOR.

The International Steel Syndicate.

The cables have been burdened with press dispatches reporting that elaborate negotiations of a very ambitious character have been in progress in London among the leading steel producers. The ostensible aim is the formation of an international steel syndicate which shall dictate prices to the world. That some dickering is going on is quite evident, but that there is even a faint hope that the all-embracing schemes which the correspondents guess at may possibly go through may be dismissed at once.

English steel makers object very seriously to the dumping of crude steel, and it will be readily understood that they would be only too glad to make some arrangement with German and American makers which would lead to a cessation of it. American and German sellers of steel blooms, billets and bars would probably be satisfied to stop, but simply for the reason that they would much rather sell the same tonnage in the same markets in the form of finished product. When they are selling crude steel to English forges and rolling mills they are giving the latter a good fighting chance to market finished iron and steel in their own and in neutral markets. It may temporarily suit the American and German steel producers to get rid of a large tonnage of billets in this manner, but their true interest, in the long run, is to convert this raw material themselves. Any attempt on the part of a syndicate of English, German and American steel makers to hold up billets would bring about in England the same results which it has done here and in Germany, to force the "pure" rolling mills to build their own steel works. It would also cause those who now produce a surplus of crude steel to extend their finishing capacity while they remain the most enthusiastic members of the steel pool.

The only hope of really accomplishing anything by any international pool or syndicate would lie in getting the works together in the different branches of the finishing trades, since it hardly seems just that with present systems of dumping of surplus in neutral markets those countries secure the cheapest steel products which have no iron industry at all. International pools in finished products are nothing new, and with the concentration of interests in some of the leading producing countries may be more manageable. Such an arrangement may look tempting in the steel rail trade, in wire products and in tubes, but those who negotiate them must develop extraordinary skill and patience. Some of the experiences of the past have not been too encouraging, so that the reports which emanate from London should be received with reserve.

Some color has been given to claims for the success of the movement by the fact that the pig iron producers of Belgium have formed a syndicate lately, but it must be understood that this is aimed chiefly at presenting a united front against the Belgian coal and coke syndicate. An effort to syndicate the steel works has failed.

So far as can be learned, a number of our own great independent producers are not participating in the negotiations, while there is no doubt that very important English interests are holding aloof. Even the house of the Germans is not quite in order, since the great new steel syndicate has just begun offensive measures against one of the recalcitrant works at home, after exhausting peaceable means. Until the schemers for international pools can come together with their home makers as practical units, no lasting arrangements can be hoped for.

Labor Agreements in Foundries.

Within the past four weeks two important labor conferences have taken place in the foundry trade. Both were held in the West. Representatives of the Iron Molders' Union of North America met a committee of the Stove Founders' National Defense Association in Chicago on March 22, and after a five days' session an agreement was made maintaining the old rate of wages for the coming year. On April 7, at Detroit, a committee from the same union met with representatives of the National Founders' Association for the purpose of securing, if possible, a uniform agreement for jobbing and machinery foundries, now operating under a variety of local agreements with the union. The joint conference was in session four days, but without result in this case.

It would appear, from full reports of these conferences which have come to hand, that both of them were unsatisfactory to the employers' organizations. The Stove Founders' National Defense Association, it is true, signed an agreement with the Iron Molders' Union, so that peace with the stove molders is assured for the year ending March 31, 1905. But a reduction of 15 per cent. in molders' wages had been desired and was quite strenuously insisted upon. The arguments advanced by the manufacturers' representatives strongly urged the necessity of such a reduction. They not only pointed out the desirability of being placed in a position to reduce the selling price of their product in conformity with general trade conditions, but also called attention to the increasing competition which stove founders are obliged to meet from makers of sheet steel constructions. Every sheet steel range or stove sold, they said, takes the place of one which otherwise would have been largely made in a foundry. To meet such competition, they are obliged to make a cheaper class of goods. But the stove molders' representatives were obdurate, notwithstanding the fact that their wages had not been reduced during the depression of 1893 to 1898, when wages in other industries were reduced 20 to 40 per cent., and had been advanced considerably since then, so that stove molders now receive 38 per cent. more than ten years ago. So the committee of the Defense Association gracefully yielded. The molders, on their part, graciously agreed not to press the use of the union label on the goods made by the members of the association. Peculiar action was taken with regard to apprentices. This has been the subject of much discussion between the two organizations. It was finally "agreed that whenever a member of the Stove Founders' National Defense Association finds he cannot secure the molders he may require for the needs of his business, the question shall be referred to the presidents of the two associations or their representatives for investigation and relief. If it be found that the foundryman is entitled to relief he shall be allowed to employ such additional number of apprentices as shall be mutually agreed upon." It will be extremely interesting to note the result of such applications for relief. As the molders' union has never yet been convinced that the stove founders are "entitled to relief," it will be remarkable indeed if the president of the union can be brought to see the desirability of something which his members oppose.

While the stove founders are thus assured peace, the machinery and jobbing founders who belong to the National Founders' Association have no such assurance. They could have had it, of course, if they had accepted the views of the molders' union. The representatives of the latter took up the New York agreement and desired to weave into it what the founders considered impossible provisions. These proposed changes were not only foreign to its purpose, which was to secure immunity from strikes, but if they were allowed to gain a footing they would possibly render the instrument inimical to employers' interests. On the uniform agreement the molders' representatives presented views considerably at variance with those held by the employers. The conference thus ended fruitlessly. Following the adjournment of the conference the Administrative Council held a special session and formulated its policy, advising the members that when a change of wages is contemplated at the expiration of existing contracts, or in the absence of contracts, they shall give 30 days' notice, so that "the affected parties may have the benefit of local or national conference in accordance with the New York agreement, and if said conference fails to reach a conclusion within the stipulated time, then the change of wage may take effect, subject, however, to the finding of said Arbitration Committee representing the National Founders' Association." The council further decided that when a strike occurs in violation of a regular agreement, or is due to a disagreement at a conference, the members or officers of the association will not again confer with members of the Iron Molders' Union on any matter connected with the shop affected until the member interested elects to do so with the consent of the council; but this shall not, in any event, be sooner than one year from the time the strike is declared off. The object of this action is to maintain the advantage often won at considerable expense and annoyance to the individual member and the association, or, in other words, to keep a shop "open" after a successful contest has been waged with the union.

It will be observed that the difference between the two employers' organizations is marked. The Stove Founders' National Defense Association is frequently alluded to as a model employers' organization, as it maintains peaceful relations with the molders year after year. But, clearly, it only does so by refraining from pressing its own policy too firmly.

The Province of the Middleman.

Theoretically, the existence of the middleman is an economic loss. He produces nothing, and makes his living and his profit by taking a slice off of every commodity he handles. One of the aims of trusts and consolidations, as outlined in their several prospectuses, was to eliminate the middleman and to save his profit to the customer. When the tidal wave of consolidation was at its hight, prophecies were freely made that brokers and even jobbers would find their occupations gone and would have to seek new fields of endeavor.

How has this prophecy worked out? We find, in Chicago, for instance, fully as many jobbers and brokers and manufacturers' agents as there ever were in the palmy days of free competition, and many of them are prospering. Except with the United States Steel Corporation and two or three other large consolidations, mills cultivate the middleman, particularly at a time like the present when the all absorbing problem is to secure enough business to keep plants in economical operation. Even the large consolidations are not averse to quoting prices to these despised middlemen and accepting business from them.

The fact is that a man or firm possessing the ability to sell goods and backed with the important asset of favorable acquaintance with buyers will always find goods to sell from some source. It is often a matter of great convenience for buyers of varied lines that enter into their product to place their business with one responsible broker or jobber who represents producers of many lines, rather than to attempt to deal with each of a large number of mills direct, holding the middleman responsible for the seasonable delivery of all their requirements.

On the side of a mill producing but one commodity, the cost of selling its product direct to the consumer is apt to be greater than the 50 cents or $1 per ton commission that it would pay the middleman. The middleman handling 20 lines can afford to send his travelers everywhere, for they are sure to pick up profitable business in some of their lines in every town, while the one-product mill traveler, losing the order he is sent to get, has shot his one arrow and must needs retreat.

Economic Conditions of the Belligerents.

European monetary centers are looking for a Russian loan of $150,000,000 or $200,000,000, though the overtures of the Russian financial agents are reported to have met with little encouragement at first, and the presumption is that Russia finds it necessary to pay a higher price for an accommodation than she desired. Japan has sounded foreign money markets without much encouragement, and is believed to be feeling the fiscal pulse in this country now.

Financial authorities complain that they can make little out of the statements issued by the Russian Ministry of Finance. Surpluses are reported almost every year, but there is frequent borrowing, the expenses are advancing rapidly, and there is an impression that the surplus revenue is a matter of bookkeeping. The economic condition of both countries is regarded as a better basis for an opinion on each country's ability to stand a long war than the balance sheets issued by the Ministers of Finance.

The Russian budget for 1904 showed an increase of ordinary expenditures over the previous year of 86,000,000 roubles; the increase in 1903 was 104,500,000 roubles, and that of 1902 was 119,300,000 roubles (the rouble is worth 51.5 cents). The extraordinary expenses for this year, estimated last fall and without regard to war, are 212,178,804 roubles, against an average extraordinary expenditure for the past five years of 159,200,000 roubles. Nearly all this extraordinary expenditure was to be drawn from the "free balance" in the Treasury, regarding the source and even the existence of which the financial experts are in some dispute. Most of the extraordinary expenditure is for railroads, but Russia builds railroads for military rather than commercial purposes, and at the end of 1902 Mr. Witte, then Minister of Finance, admitted that the loss on railroad operation had increased from 2,600,000 roubles in 1900 to 45,000,000 roubles in 1902, and estimated that the loss would be 84,000,000 roubles in 1905.

At the end of 1902 Mr. Witte reported to the Council of State "that the population is weighed down by direct and indirect taxation to the uttermost limit that can be borne," and the Council assented that "it is impossible to increase taxation any further in order to satisfy the growing requirements of the various departments of State." The latest budget refers to the ukase of March 12, 1903, repealing the mutual responsibility of peasants

for the payment of assessed taxes in 46 provinces of European Russia and says, "this ukase frees the thrifty peasants of more than 62,000 villages from responsibility for defaulters in respect to State taxes and zemstvo and communal rates." The amount overdue for land allotments at the time of the emancipation of the serfs is stated to be 120,000,000 roubles, and Mr. Poljenow, member of a commission appointed five years ago to investigate the economic decay of the central governments of European Russia, says that the arrears of taxes had increased from 10 per cent. in 1871-75 to 42 per cent. in 1896-8. According to a Russian writer, Lochtin, "there is no land on earth in which the yield per acre is smaller than in Russia; or, in other words, there is no country in which agriculture is worse carried on." Poljenow says there has been a decrease of 35 per cent. in the amount of grain sown per capita in 30 years; that the ground yields 27 per cent. less than it did 30 years ago; that in the provinces investigated the number of horses decreased 48 per cent. between 1868 and 1895 and "the Russian peasant living in these governments suffers chronically from insufficiency of food, and the terrible consequences are already apparent to a pronounced degree." The per capita production of grain was less in 1894 than in 1870, while exports of grain had increased. The Ministry of the Interior estimated that 726 pounds of grain per head per annum should be the minimum consumption, but in 1895, which was not a bad year, the consumption was only 528 pounds.

The St. Petersburg *Viedomosti* of November 13, 1901, said: "Russia is chronically starving; pauperism increases in extent and degree. . . . The people in the country, young and old, labor with all their force, but all their exertions do not suffice to satisfy the requirements of the State, and of those who live on the labor of the peasants." On March 13, 1902, the same paper said: "Russia consumes one-third less bread per head than Germany, without allowing for the fact that the Germans eat more potatoes and meat than we do. If the Russians were as well nourished as the Germans are we should not be able to export any grain."

Turning to Japan, a Japanese statistician says that the national income is about $15 per head, against nearly $220 in the United States, and about $75 even in Spain. The rate of taxation proportioned to income is very heavy. For several years prior to 1895-96 the Government revenue was about $50,000,000, and the expenditures about $40,000,000 per annum. Since that year the average of receipts and expenses has been about $120,000,000, and for the year 1902-03 the receipts and expenses, ordinary and extraordinary, were about $140,000,000 for each side of the account.

After the war with China a ten-year programme of national development was adopted at an estimated cost of $300,000,000. That amount had been spent a year or two ago, and it would require from $50,000,000 to $75,000,000 to complete it. In 1901 it was necessary to suspend the execution of the programme on account of the depression of business and the fact that but a small part of the domestic loan of $130,000,000 had been taken. A foreign loan of $50,000,000 had been floated, but efforts to borrow further had not met with encouragement. This programme covered military and naval expenditure, railroads and telegraphs and Government factories. It was proposed to meet the general increase of expenditure by increased taxes, to meet the military expenditures out of the Chinese indemnity, and the industrial investments out of loans. It has not been possible to borrow as much either at home or abroad as was expected; from the Chinese indemnity only $100,000,000 were available for the purposes of the programme, and $200,000,000 have already been obtained from taxes and loans for these exceptional expenditures.

From 1896 to 1902 the adverse trade balances of Japan amounted to $150,000,000, and Japan, like Russia, has been within a few years the scene of excessive industrial exploitation, followed by business depression, which was, perhaps, less general and severe in Japan than in Russia, but it was severe enough in the former country to check the ten-year programme, and make the task of the Finance Minister a difficult one. The Government has, however, been able to float a loan of $50,000,000 at home for present war purposes. The Russian budget for 1904 spoke of the country as just emerging last fall from the prostration of business.

Any settled Government can borrow, at a price, and money for war is found somehow, but the prospects are not cheerful for the masses of the people of either Russia or Japan, and the talk about a war of two years cannot fail to raise some question as to the capacity of either nation to stand the financial strain for such a period.

The Reversing Motor for Machine Tools.

The reversing motor is attracting much attention with some manufacturers of machine tools and seems destined to play an important part in the next stage of the development of the direct connected motor driven machine. A comparatively short time ago the electrical engineers discouraged an expressed hope that a reversing motor could be designed to give efficient service for this purpose, yet to-day several of the manufacturers of electrical equipment are furnishing one which, so far as tried, has given satisfactory results. In an engine lathe, for example, a reversing variable speed motor gives the operator very complete control of his machine. In one lathe, not yet put on the market, a lever on the apron operates the reversing mechanism of the motor, causing it to act on the spindle with exceeding quickness, so much so that the spindle may be stopped within very narrow limits of the point desired, which may be a considerable factor in certain forms of thread cutting. Considerable cost is saved in the manufacture of a machine so equipped, it is claimed, because gearing necessary in procuring the reverse motion where the motor revolves in a constant direction is dispensed with. It is a sight that few machinists would fail to appreciate—a lathe spindle oscillating rapidly; in fact, as rapidly as the controlling lever can be moved back and forth by the operator. The reversing motor has not been tested sufficiently in commercial practice to establish its real efficiency, but it is a very interesting phase of machine tool development, and one that will doubtless be developed to complete efficiency if it has not already reached that point of perfection.

The Youngstown Iron & Steel Roofing Company.—Through an unfortunate error in making up the advertising pages of *The Iron Age* for last week the announcement of the Youngstown Iron & Steel Roofing Company, Youngstown, Ohio, was omitted. Their advertisement will be found in this issue on page 4. The company manufacture iron and steel roofing and siding, sheet and expanded metal lath, bridge and fire proof flooring; operate large sheet mills, and manufacture iron and steel sheets, both black and galvanized.

No. 1 blast furnace of the Carnegie Steel Company, at South Sharon, Pa., is making some excellent records for production. On Sunday, April 24, this stack turned out 655 tons of basic iron in 24 hours, the best previous record for a similar period having been 624 tons.

Labor Notes.

The striking molders of the Saco & Pettee Mfg. Company, Biddeford, Maine, have returned to work, the trouble between them and their employers having been adjusted. The injunction proceedings brought against the strikers by the company will be immediately withdrawn. The demand for increased wages was not granted.

The boiler makers employed by the New York, New Haven & Hartford Railroad have gone on strike because of the refusal of the company to grant a 15 per cent. increase of wages in connection with a nine-hour day, which latter demand was granted, together with several minor points. The shops affected by the strike are at New Haven, Conn., and Norwood, Roxbury and South Boston, Mass. A considerable number of men remained at work. The nine-hour day went into effect at the company's shops on Monday morning. The machinists and other classes of labor had joined with the boiler makers in their demands, and the demand relating to a nine-hour day having been granted, the time schedule was changed accordingly. But the wage advance was not granted, so that the men will receive nine hours' pay on the same basis per hour as formerly.

The tin works of New Castle, Pa., have voted to accept the 20 per cent. reduction asked by the American Tin Plate Company. The Sharon tin workers voted against accepting it. The New Castle plants are under the Amalgamated Association agreement.

The coal miners at the Sharon Steel Company's mines in Mercer County, Pa., have been on a strike for eight months. They are being supported by their union, and are not yet tired of the strike.

More than 400 men are out of work as the result of a strike by 40 members of the newly formed branch of the Amalgamated Association at the Harrisburg (Pa.) Rolling Mill. The strikers were discharged, and the mill closed by the company. Armed guards have been sworn in by the Mayor of Harrisburg to prevent violence.

The report that the Republic Iron & Steel Company would ask the Amalgamated Association to lower the base rate in the puddling scale, which is now $5 a ton, based on a 1.2-cent card rate for bar iron, is untrue. The only basis for the report is that Vice-President G. Watson French visited Youngstown recently for the purpose of inspecting the plants of the company in the Youngstown district, but the question of wage scale matters was not taken up.

The roll turners in the employ of the Republic Iron & Steel Company, at Youngstown, Ohio, will be asked to accept a reduction in wages when the present scale expires on May 16. They are now receiving $3.50 per day.

Between 5000 and 6000 blacksmiths and wheelwrights, employed by 600 wagon builders in New York City, will probably be locked out next Monday. The unions demand a 51-hour a week schedule, with one apprentice to every 15 men, and increased wages, and that their walking delegates be permitted to enter any shop and talk to the men; also a Saturday half holiday with a full day's wages.

The heaters and catchers employed at the Waynesburg Forge, Sheet and Tin Mills, Waynesburg, Pa., went out on a strike last week, refusing to accept the cut of 18 per cent. in wages agreed upon at the recent conference between the Amalgamated Association and the mill owners. However, the company expect to be able to resume operations within a few days, as a great many of their striking employees are applying for work at their old positions, realizing the futility of the stand they have taken.

The expected settlement of the strike of the employees of the Fore River Ship & Engine Company, Quincy, Mass., not having materialized, the company announce the indefinite postponement of the launching of the battle ship "Rhode Island."

The American Can Company.

The annual meeting of the American Can Company was held in Jersey City on Tuesday, at which the report for the fiscal year ending March 31 was presented. This report, which is a favorable one, makes the following showing in comparison with that for the previous year:

	1904.	1903.
Net sales	$22,919,524	$22,076,394
Profit	2,394,510	886,711

The general balance sheet as of March 31 shows:

Assets.

	1904.	1903.
Plant, real estate, &c	$75,030,694	$75,298,083
Improvements	2,747,745	1,808,339
Other investment items	485,615	1,009,439
Cash	1,845,899	1,639,291
Accounts and bills receivable	1,480,551	1,488,214
Merchandise inventory	5,218,104	5,121,901
Totals	$86,808,608	$86,365,267

Liabilities.

Capital stock	$82,466,600	$82,466,600
Accounts payable	864,584	1,123,393
Mortgage assumed	.....	113,000
Unpaid dividend (paid April 1)	1,030,833	.....
Surplus	2,446,591	2,662,275
Totals	$86,808,608	$86,365,267

President F. A. Assmann stated that during the year the remainder of the mortgages assumed by the company, amounting to $113,000, were retired. Referring to the growth in the business, he said: "This increase has been obtained in the face of lower average prices for our products. The physical condition of the factories is better in many ways than ever before. The benefits of concentrating our work in fewer factories, with better machinery and supervision, have been demonstrated. In the last year the number of factories in operation was still further reduced by five, and the company are now operating in 31 can factories and two machine shops. Two detinning plants were completed."

O. H. Bogue was elected a director to succeed C. S. Guthrie. The other directors were re-elected. George G. McMurtry was elected a member of the Executive Committee. Following the stockholders' meeting the directors organized by electing the retiring officers with the exception of A. Apfel, vice-president, who retired on account of ill health. H. N. Norton was elected in his place. The board also filled the vacancy in the directorate caused by the resignation of Mr. Apfel by the election of R. L. Skofield. D. G. Reid was made an additional vice-president and F. S. Wheeler treasurer. J. S. Sturgis was elected auditor, a new office, and W. M. Williams, assistant auditor.

The one hundred and thirty-eighth regular meeting of the Philadelphia Foundrymen's Association, Philadelphia, Pa., which is to be held May 4 in that city, will be devoted to a "vaudeville dinner" in honor of the Pittsburgh and New England Foundrymen's associations, who are to be their guests on that evening. The dinner will be given at the Manufacturers' Club at 6.30 p.m. The committee on Arrangements consists of Dr. Elmer E. Brown, George C. Davis, Josiah Thompson, J. H. Sheeler, George S. Romiger and Thomas Devlin, president, and Howard Evans, secretary, *ex-officio*.

The Clairton Deal Not Concluded.—PITTSBURGH, PA., April 27, 1904.—(*By Telegraph.*)—As yet the final papers in the transfer of the plant of the Clairton Steel Company to the United States Steel Corporation have not been signed, but probably will be in a day or two. In the last few days some matters came up for adjustment which threatened to delay its consummation or perhaps break it off altogether, but these have been arranged, and on Tuesday night H. C. McEldowney and W. G. Park, receivers of the Clairton Company, went to New York and are in consultation to-day with officials of the Steel Corporation, with every probability that the transaction will be closed up this week. So much time has been required to complete the details that it has been decided that the Steel Corporation will not take possession of the Clairton plant until May 20. The terms of sale are practically those stated last week, only a few minor changes having been made.

MANUFACTURING.

Iron and Steel.

The Vulcan Crucible Steel Company, Pittsburgh, whose works are at Aliquippa, Pa., are now operating to full capacity all departments of their plant, owing to the heavy demand they are having for their crucible and acid open hearth steels. They make a specialty of high grade tool steel.

Stack No. 3 of the Pennsylvania Steel Company, at Steelton, Pa., which has been undergoing extensive repairs, will be blown in within a few weeks.

The Carnegie Steel Company's plants at Sharon and New Castle, Pa., are all at work except the plants where repairs are in progress. The repair work is well advanced and soon all the plants of the company in these places will have resumed. New blast furnaces are well on toward completion both at the New Castle and the South Sharon plants.

Blast furnace No. 3 of the E. & G. Brooke Iron Company, at Birdsboro, Pa., was lighted last week. George Brooke, Sr., fired the furnace. He has been in the iron business since 1837. The furnace has been rebuilt and enlarged and will be one of the best producers in the Schuylkill Valley.

A prospectus has been issued to local capitalists of Chester, Pa., by a number of iron men, for a new corporation for the purpose of manufacturing seamless steel pipe. It is proposed to incorporate the company at $800,000. The seamless pipe will be made from the ingot direct by a newly patented process. A site adjoining the Vulcan Iron Works is looked upon favorably as a location for the plant. Those who have received copies of the prospectus are for the present pledged not to reveal the names of those back of the project.

The stack of the Robesonia Iron Company, at Robesonia, Pa., has resumed operations.

The Reading Iron Company, Reading, Pa., are tearing down the old pipe mill adjoining the new plant which was recently started up on South street, and in its place will erect a steel structure to be used as the threading department. Work on the foundations will be started at once, and the building will be completed during the summer.

While it is true that the Carnahan Tin Plate & Sheet Company, Canton, Ohio, intend to increase their capital stock from $300,000 to $500,000, the company do not mean to make any important improvements to their works. They have taken out a charter under the laws of New Jersey, with a capital of $500,000, and this will take the place of their old Ohio charter, which called for a capital of $300,000.

The Matawan Steel & Iron Company, Matawan, N. J., contemplate the construction of a new plant.

Ex-Attorney-General Hensel, attorney for the Fidelity Trust Company of Philadelphia, trustees, has issued a writ against the Chickies Iron Company, who operate Chickies Furnace, in Lancaster County, Pa., to foreclose a mortgage on the property, amounting to $122,875.

The Lackawanna Steel Company, Buffalo, have been awarded the contract for the steel rails to be used in the construction of the new Rockland, South Thomaston & Owls Head Street Railway. The first section of the road to be built will be that from Rockland to Crescent Beach, and this will be ready for business at the opening of the summer season.

The American Steel & Wire Company will increase the capacity of the Central Blast Furnace, Cleveland, Ohio, and have let the contract with the Hunkin Brothers Construction Company for foundation work for the new furnaces and stoves.

General Machinery.

The Fisher Governor Company, Marshalltown, Iowa, report that they are meeting with success in the sale of the Fisher steam pump governor both at home and abroad. Among the noteworthy foreign sales are some for the German navy, the governors being made entirely of brass to meet German naval requirements. The underground railways of London have also ordered Fisher governors.

The name of the Clinton street plant of the Allis-Chalmers Company, at Milwaukee, has been changed by the directors from "the Edward P. Allis Works" to the "Reliance Works."

W. R. Down, 1050 Penn street, Reading, Pa., has installed a small plant for the manufacture of his patented twist drill. The drill is made in two sections and has been tested by several manufacturers with very good success.

The Harrisburg Foundry & Machine Company's stockholders will meet at Harrisburg, Pa., on July 14 to vote on a proposition to increase the capital stock of the company from $400,000 to $500,000. The purpose of the increase has not been officially announced, but it is understood that the plant will be increased in size. The works have been operated night and day for several weeks in an effort to complete contracts on time. The company have orders enough on hand to keep the plant busy for three months.

The Monroe Machine Works, Monroe, N. C., were commenced on January 1, this year, the proprietors being W. G. Howard and his son, M. W. Howard. They purchased ground 190 x 280 feet near the freight depot of the Seaboard Air Line Railroad and erected a building 24 x 60 feet. Work done is mainly general repairing, the only new thing they are as yet manufacturing being a saw mandrel.

The Arthur Machine Company, Lewisburg, Tenn., recently incorporated, have bought the machine shop and mill supply business of Hardison & Arthur, which they will operate. No additions to the plant are contemplated. P. D. Houston, Jr., is president, E. L. Aschheim vice-president, and T. E. Arthur secretary and treasurer.

The Schenectady Railway Company, Schenectady, N. Y., have decided not to build their proposed new repair shops this year.

The Scott & Oliver Mfg. Company, Knoxville, Tenn., have recently added to their machine and wood working shops a steel building for their foundry and boiler work. It is 100 x 400 feet. The boiler equipment is supplied by the Whiting Company, and the machinery of the boiler shop is also of the latest improved designs for boiler and structural steel work. All the necessary machinery for the complete works has been ordered and the whole are expected to be in operation in 60 days.

The Southern Foundry & Machine Company, Knoxville, Tenn., were organized and commenced four years ago as iron founders and machinists and also the manufacture of stoves. These branches were all carried on until last year, when the whole of the buildings were destroyed by fire but the gray iron foundry. The manufacture of stoves was then discontinued. The fire caused a suspension of work in every department for four months. The machine shop and foundry are now in full operation, doing general repair work, rebuilding stationary engines and locomotives and manufacturing all kinds of mining cars and marble mill machinery. The president of the company is F. D. Griffith; engineer, W. L. Bradley, and manager, Q. R. Tillery.

Heyl & Patterson, Incorporated, Pittsburgh, who recently applied for a charter, with a capital of $800,000, succeed to the business of Heyl & Patterson, and will build labor saving devices, coal tipples, car hauls, coal washing plants, &c. It is their intention to make large extensions to their Allegheny works, to cost from $30,000 to $50,000. The company have on hand some very large contracts, one of which is a coal washing plant to be built for the Dominion Iron & Steel Company, Sydney, Nova Scotia, which will cost about $350,000. It is said to be one of the largest coal washing plants ever built.

The business of T. R. Almond, 83-85 Washington street, Brooklyn, N. Y., manufacturer of Almond coupling chucks, turret head oil tubes, flexible tubes for electric light and gas brackets, has been incorporated as the T. R. Almond Mfg. Company. No changes are contemplated.

The Rand Drill Company, New York, have just installed two compressed air plants for the United States Government, one at Fort Stevens, Ore., and one at Tuscaloosa, Ala. At Fort Stevens the equipment consists of one Rand Imperial, type 10, air compressor, having duplex cylinders 7 inches in diameter and compound air cylinders 10 inches and 6½ inches diameter with 8 inches stroke; several Imperial pneumatic riveting hammers and calking hammers, and piston air drills. It is understood that the plant will be used for the improvement of the mouth of the Columbia River. The Tuscaloosa equipment consists of one Rand 8 x 8 x 12, Class C, straight line, steam driven air compressor, a number of Imperial pneumatic long stroke riveting hammers and Imperial piston air drills.

Maurice Dillon has been appointed receiver for the Jackson Iron Works, New York, in order to facilitate the liquidation of the company's business. The company decided to go out of business some time ago and sold their plant at Aldene, N. J., to the Watson-Stillman Company, New York, who have extensively enlarged it and are now moving in.

The Smith & Winchester Company, South Windham, Conn., manufacturers of paper and laundry machinery, announce that they are to go out of business, after an existence which dates back to 1828, when they were organized under the existing name of Smith & Winchester. They have sold to Guilford Smith that part of their business which was purchased some years ago from the Frank A. Jones Company of New York, comprising undercut and overcut paper cutting machinery. Mr. Smith may continue the manufacture of these machines at South Windham.

The Transue & Williams Company, Alliance, Ohio, have secured control of the Buckeye Jack Company, Louisville, Ohio, makers of jackscrews up to 30 tons capacity. The plant will continue to be operated in Louisville, as it is convenient to the Alliance works.

The Parker Machine Company, Buffalo, N. Y., capitalized at $250,000, have been incorporated for the manufacture of typewriting machines and special machinery. The directors are Richard F. Rankine, John H. Belser, Jr., Finley H. Greene, Wellington C. Lake and J. E. Stephenson of Buffalo and G. E. Williams of Silver Creek, N. Y.

The Frontier Engineering Company have been incorporated at Lockport, N. Y., with a capital stock of $150,000, and will soon erect a large plant at that place for the manufacture of paper mill, wood pulp mill and other mill machinery. The directors are John L. Sheldon and H. W. Nichols of Lockport and George R. Sheldon of Middleport, N. Y. The scope of the

company includes the dealing in pulp and paper mill properties in addition to the manufacture of machinery.

There is no truth in the reports that the Buffalo & Susquehanna Railroad Company are to erect shops at Addison, N. Y. The company, however, contemplate extending their yard facilities at that point.

Baldwin, Tuthill & Bolton, mill and factory supplies and specialties, Grand Rapids, Mich., advise that by reason of the fact that on March 25 the first floor of their office and factory was flooded to the depth of 6 feet, seriously damaging their exhibit which was on the floor ready for shipment, and also because they were practically out of business for two weeks, with a large accumulation of unfilled urgent orders on hand, they have decided to abandon their display and will not participate in the exposition at St. Louis.

Power Plant Equipment.

The Latta & Martin Pump Company, Hickory, N. C., have just taken a contract for a large pneumatic pumping equipment to be installed at Willswood Sugar Plantation, Jefferson Parish, La. This equipment is to handle 2,500,000 gallons of water daily at a distance of 2600 feet from the power plant.

The Union Metallic Cartridge Company, Bridgeport, Conn., are to erect a new power house and will equip it with two Parsons turbines of 600 horse-power each to operate part of their plant. The power house will be 92 x 110 feet, a part of it two stories. The present boiler installation will be sufficient for the purpose.

The Richford Foundry Company, Richford, Vt., are to begin the manufacture of gasoline engines this season.

The Snow Steam Pump Works, Buffalo, N. Y., are at work on a contract for four 1000 horse-power gas engines for use in the Ohio gas fields, to pump natural gas to the larger cities. They also have the contract for three direct connected engines and pumps, with boilers, for the new sewage pumping plant which the city of Buffalo is erecting on the old Hamburg Canal site.

The Helley Mfg. Company have completed the removal of their entire plant from Lockport, N. Y., to Buffalo, and are at present engaged on a contract for three vertical triple expansion pumping engines for the city of Philadelphia, having a capacity of 30,000,000 gallons each per 24 hours.

The Kentucky Packing & Provision Company are a new packing company erecting a large plant at Louisville, Ky. Their power equipment has just recently been purchased. John S. Gregory of Chicago has secured the contract for two 100 horse-power tubular boilers and one 150 horse-power engine.

F. C. Werk, Cleveland, Ohio, electrical engineer, has secured a contract for a power plant for the Isaac Leisy Brewing Company, Cleveland. The brewery is to be equipped with motors for operating all machinery.

The Mouat-Squires Company, Cleveland, Ohio, have secured the contract for boilers, steam heating and power equipment for a new power house to be erected for the St. Joseph's Orphan Asylum, Cleveland.

Foundries.

The Ramapo Foundry & Wheel Works, New York, recently incorporated with a capital stock of $100,000, have taken over the works of the Ramapo Wheel & Foundry Company, at Ramapo, Rockland County, N. Y. These works were established in 1868 and have run continuously since then. The capacity is 300 wheels per day. J. Fred. Pierson is president.

Considerable new equipment will probably be required by the Eriez Stove Mfg. Company, Erie, Pa., who are building a new plant on the Nickel Plate Route, which they will equip with the latest machinery for the manufacture of gas heaters, ranges, water heaters, gas burners and gas appliances. The company have been organized with a capital stock of $15,000. They have applied for a patent on their new Eriez sectional burner, on which they are showing some new and original features. Patterns for gas heaters and burners only will be ready for this season's business. Jas. E. Nason is manager.

The Youngstown Bronze Company, Youngstown, Ohio, have not yet decided what machinery they will require for equipping their proposed extension. It is their intention to enlarge their plant, the present plan being to purchase a building and move it to their plant. They are now negotiating with several parties for the purchase of their buildings.

The Sharon plant of the American Steel Foundries, at Sharon, Pa., has been shut down for an indefinite period, and the plant is being boarded up. There have been more or less labor troubles at this plant for some time, and the American Steel Foundries decided to close it for an indefinite period.

Joseph Stickwell has leased the building at New Britain, Conn., formerly occupied by a spring bed company, and will equip it for a brass foundry.

The foundry business of Stannard & Son, at New Haven, Conn., will be continued under the name of the Stannard Iron Foundry.

The Birmingham Steel & Iron Company, Birmingham, Ala., are installing a 10-ton open hearth plant for making steel castings.

The Cleveland Foundry Company, Cleveland, Ohio, have taken out a permit to erect a $6000 addition to their plant at the corner of Platt street and the Pennsylvania Railway, Cleveland.

Bridges and Buildings.

The Prince Iron Works, 553-557 West Thirty-third street, New York, recently incorporated, have acquired the business of the Prince & Kinkel Iron Works, structural and ornamental iron work. Mr. Kinkel retired from the business in 1901 and the new corporation have been formed simply for the purpose of dropping his name. The company are enlarging their facilities, taking more room in the structural and ornamental departments, and in the structural department installing a riveting plant and additional heavy machinery so as to allow not only, as heretofore, the prompt delivery of beams and shapes from stock but also fabricated and riveted material. No new machinery is required for these improvements.

The Champion Iron Bridge Company, Wilmington, Ohio, have secured a contract for building a $6000 iron bridge over Twelve Mile River at New Richmond, Ohio. Fifteen bridge people filed bids for the contract.

Fires.

The plant of the Brian Pottery Company, Trenton, N. J., was destroyed by fire last week. The loss is placed at $100,000.

The plant of Wiener & Co., Newark, N. J., manufacturers of saddlery hardware, was destroyed by fire April 23. The loss is estimated at $75,000.

The recent fire at the plant of the American Ship Windlass Company, Providence, R. I., did considerable damage to the buildings, but the damage to the machinery was slight. The company are now moving the machinery from the burnt portion of the plant to the erecting shop and cleaning and setting it up. It is expected that work can be resumed in all departments within a few weeks.

The brick factory building at New Haven, Conn., occupied by the New England Broom Company and the Bradley Mfg. Company, manufacturers of novelties and ice cream cabinets, was destroyed by fire the 20th inst., each concern losing $15,000 on stock and machinery.

The Pine Brook breaker of the Scranton Coal Company, Scranton, Pa., was destroyed by fire April 26, causing a loss of $60,000.

Hardware.

The Empire Knife Company, Winsted, Conn., will add a story to their factory, which will give them new space 18 x 120 feet for a cutler's room.

The Southern Broom Mfg. Company have been incorporated at Evansville, Ind., with $25,000 capital by August Rosenberger, Herman Rusche, Joseph R. Kuhlman and others.

The Neely Knife & Saw Company have been incorporated at Anderson, Ind., with $25,000 capital by J. K. Johnson, Chas. Kemmery, F. W. Kennett, Herbert G. Neely and Wm. F. Edwards.

W. B. Berteis, Son & Co., Wilkes-Barre, Pa., whose tinware factory in Wilkes-Barre, Pa., was burned last October, will build a large plant on the site of the burned building. The new plant will be two stories, of brick, 75 x 100 feet, and fully equipped will cost $25,000. This addition will give the plant a total daily capacity of 25,000 lard cans, 2000 dinner pails and 1000 boilers. The present working force of 100 will be increased to 250. The company have just completed a 25 x 100 foot storage house and another brick building is in the course of construction.

The Evart Tool Company, Evart, Mich., formerly including E. S. Gough, F. McDougall and C. D. Lawton, have reorganized, Mr. Lawton retiring. The new company—Evart Tool Company, Limited—have a paid up capital of $10,000, the following parties being interested: V. R. Davy, Fred. B. Smith, L. E. Davy, Oliver Clark, F. McDougall, E. S. Gough and G. R. Tummonds, the latter having been with the Champion Tool & Handle Works of Evart for a number of years. The new company will manufacture lumbering, logging and river driving tools; also other staple articles. A full equipment of new machinery is being put in and will occupy the plant formerly used by the Evart Grain Seed Separator Company.

Richmond Foundry & Mfg. Company, Richmond, Cal., San Francisco office at 517 Market street, who were incorporated some months since with a capital of $100,000 for the manufacture of a line of hardware specialties, are now in full operation, and already additions amounting to double the present capacity are contemplated in view of the large business which is offering. The company's present working force comprises 60 men, most of them being skilled mechanics brought from the Eastern States. The plant has been equipped with the most modern machinery, and they are using electric power, which is referred to as one of the chief advantages of their locality, being even cheaper than steam, with low price fuel oil on the ground, and much more convenient.

The annual meeting of the stockholders of the Chandelier & Art Brass Works, Richmond, Ind., was held on the 12th inst. The statement of the business of the past year, which was the present company's first year, was very satisfactory. The plant has outgrown its present facilities. Last fall the company had more orders than they could take care of, and some orders were refused. Prospects for another good year's business are very en-

couraging. The company are now, in addition to their regular business in chandeliers, taking on a new industry in the shape of the manufacture of metal stepladders. Realizing that the present facilities were wholly inadequate to meet the demand, it was definitely decided to build a new factory at once. The company have in view several locations in Richmond, and also have favorable propositions from other cities. All of these are being considered and the location of the factory will be determined within a short time.

All of the interest of the Chattanooga Wheelbarrow & Mfg. Company, Incorporated, Chattanooga, Tenn., was purchased by C. C. Nottingham and E. E. Meredith in November last. Since taking possession they have completed a number of improvements in the plant and others will shortly be made which will considerably increase the capacity of the works. As yet only wood wheelbarrows in 15 styles are made, but the manufacture of several styles of steel tray barrows with wood frames will be commenced shortly.

The Chattanooga Roofing & Foundry Company, Chattanooga, Tenn., are very busy in all departments. They have recently erected an addition, 50 x 130 feet, to their wrought iron department to meet increasing demands. It is fitted with up to date machinery, the motive power being electricity. Additional machinery has been installed in the metal shingle factory, doubling its capacity, and another column lathe has been placed in the cast iron architectural department. The different buildings of the plant cover two blocks, while the railroad facilities are excellent.

Miscellaneous.

The St. Louis Car Company, St. Louis Mo., are building a private car for John I. Beggs which will cost more than $20,000 and which will be very elaborate in its appointments. The company are also building a line of cars for use on the intramural railway inside the grounds. These cars are being built with a view to giving the greatest possible comfort to the patrons and are also highly ornate. They are convertible, it being possible to change them from closed to open cars in a few minutes. The business of the St. Louis Car Company has grown very rapidly the last year or two, and they are now employing about 2400 hands and have a capacity for completing 3500 cars a year. Some of their largest contracts are for cars for the elevated and surface lines of Chicago.

The Ohio Sand Company, Conneaut, Ohio, producers of molding sand, are erecting new buildings and installing drying equipment, together with industrial tracks and tramcars for handling the raw material. The F. D. Cummer & Son Company, Cleveland, are furnishing the new equipment.

The Wadsworth Brick & Tile Company, Wadsworth, Ohio, are erecting a new plant for the production of brick and tile. E. M. Freeze, Galion, Ohio, has received a contract for a portion of the required machinery, and the balance of the equipment will be furnished by George Stevenson, Wellsville, Ohio.

The St. Louis Mfg. & Model Perfecting Company, 225 Frisco Building, St. Louis, Mo., recently incorporated, have their plant in operation and are at present installing a department for model work. The company manufacture new composition emery wheels, security sash fasteners and souvenir specialties.

The Milwaukee branch of the Federal Mfg. Company are this year making a specialty of manufacturing gear frames and front and rear axles for automobiles. The frames are made of high carbon pressed steel, combining stiffness with light weight to an unusual degree. They have orders at present for more than 2000 frames, which gives an idea of the extent to which the production of automobiles is being pushed this year.

Charles E. Hyde, for many years superintending engineer of the Bath Iron Works, and Frank W. Carleton, who constructed the wharf and launching ways for the large ships at the Eastern Shipbuilding Company's yards at Groton, Conn., have secured an option on the entire plant of the Morgan Iron Works of New London, Conn., just east of the New York, New Haven & Hartford tracks at Fort Neck, including the adjoining land of Edward T. Brown. If the parties decide to complete the purchase it is understood that the property will be improved and built up as a first-class repair plant for marine work.

The Worcester Loom Company, Worcester, Mass., have incorporated under Massachusetts laws, with a capital stock of $12,000, to carry on a loom business established about two years ago by Clinton Alvord. The officers are: President, Clinton Alvord; secretary and treasurer, William L. Ames; directors, these officers and Edgar Reed. Mr. Ames and Mr. Reed are officers of the Reed & Prince Mfg. Company of Worcester.

The Wray Pump & Register Company, 191-193 Mill street, Rochester, N. Y., recently incorporated for the manufacture of air pumps for automobiles, registers for showing pressure on tires, and hose couplings for air pumps. The plant will be equipped with electric power and special machinery.

The National Brake Company, Buffalo, N. Y., formerly conducted as a partnership by J. L. Peacock and G. S. Ackley, have incorporated. The company manufacture the National and Peacock brakes and are at present equipping several hundred cars of the International Railway, Buffalo, with their Peacock brakes. It is not their intention to erect a plant, but will have the brakes made by contract. On May 1 their offices will be moved to 682 Ellicott square. G. S. Ackley is president.

The Brick Burning Furnace Company, Fishkill-on-the-Hudson, N. Y., have incorporated for the manufacture of a furnace for burning brick. The company are now making experiments with the new process, and it will be about two months before their plans are definitely settled for putting the apparatus on the market. Address Joseph D. Cite.

The Mexican Car & Foundry Company, Mexico City, Mexico, were recently incorporated with a capital stock of $1,000,000 by Isaac M. Hutchinson and associates, who some time ago received a concession from the Mexican Government for the establishment of a large car and foundry plant in that city.

The Citizens' Gas Light Company, Quincy, Mass., have bought 2 acres of land, upon which they will erect an entirely new gas plant to replace that now operated by the company.

The Bemis Car Truck Company, Springfield, Mass., state that they have no present intention of removing their business from that city or of establishing a large plant at Springfield. Local report had it that one of these two moves was contemplated.

The Pennsylvania Brake Beam Company, Reading, Pa., have been organized for the manufacture of railway supplies of iron, steel, brass or any other metal, and will apply for a charter on May 3. Eugene M. Applebaugh, Reading, Pa., is a director.

The Randall Motor Car Company have been incorporated at Ft. Wayne, Ind., with $10,000 capital, by A. L. Randall, Fay P. Randall and Louis Ohnhaus.

Hammond, Ind., has given a bonus of $10,000 to the Straube Piano Company, Chicago, and the latter will move their plant to the Indiana city.

Tindle & Jackson, Buffalo, N. Y., have purchased the water front manufacturing site, with two mills and other buildings, at Munising, Mich., from the Northwestern Cooperage & Lumber Company and will remodel and convert the mills into factories for the manufacture of cooperage materials.

Broughton & Etheridge, Elizabeth City, N. C., are remodeling their factory and will install additional machinery. The company manufacture buggies, phaetons and high-class carriages.

The American Wire Washer Company, Unionville, Conn., are now prepared to furnish a line of wire washers, including special washers, such as spring washers and piano washers, heretofore made on screw machines. The wire washers are made on automatic machines, the company state, at about one-fourth the cost of those heretofore made.

The Joseph Dixon Crucible Company, Jersey City, N. J., held their annual meeting April 18. These directors were elected: E. F. C. Young, John A. Walker, George T. Smith, Edward L. Young, William Murray, Joseph D. Bedle, and George E. Long. The directors subsequently elected Edward F. C. Young president; John A. Walker, vice-president and treasurer, and George E. Long, secretary. Joseph D. Bedle was re-elected counsel.

A petition in bankruptcy has been filed against the Worcester Iron & Metal Company, Worcester, Mass.

The city of Franklin, Ind., has voted to install a sanitary sewer system.

The Glazier Nozzle & Mfg. Company have been incorporated at Indianapolis, Ind., with $75,000 capital stock, to manufacture patent nozzles, fire fighting apparatus, sprinklers, stoves, ranges and other metal goods. The incorporators are George C. Hitt, H. S. New, H. H. Friedley and John T., Chas. C., Lorenzo D. and Peter F. Glazier. A plant will be erected in Indianapolis.

The Edwards Headlight Company, Cincinnati, will move to Laporte, Ind., which will erect buildings for the company's plant.

The Postal Typewriter Company, New York, have leased a building at Norwalk, Conn., and will convert it into a factory, thus securing 15,000 square feet of floor space.

The Railway Appliance Company, who have a plant at 12 Plaine street, Albany, N. Y., are to reorganize.

The Walter A. Zelnicker Supply Company, St. Louis, Mo., have received a large order for their double clutch car movers from an export company in New York for shipment to foreign countries.

The Waterbury Button Company, Waterbury, Conn., are to erect a three-story brick addition to their factory. The main building will be 40 x 105 feet, with a wing 30 x 40 feet. The buildings will be of mill construction.

The Waterbury Battery Company, Waterbury, Conn., will erect a new factory. The main building will be 37 x 50 feet, two stories, with a one-story wing 40 x 41 feet. They will be of mill construction.

George Greer, district manager for the American Tin Plate Company, at New Castle, Pa.; Edwin F. Norris of the Marquis Limestone & Clay Company; Elmer I. Phillips of the American Window Glass Company, and other New Castle capitalists have organized a company to be known as the New Castle Portland Cement Company, which will erect a Portland cement plant near New Castle. The company will have a capital of $1,000,000.

The Iron and Metal Trades

The Lake Ore interests made good progress in their efforts to save the Ore Association, the negotiations thus far having led to the adoption of a schedule of prices on the basis of $3.50 per ton for Old Range Bessemer Ores and $3.25 per ton for Mesaba Bessemers, a differential, therefore, of only 25c. per ton. Last year the base price was $4.50, while for the preceding season it was $4.25. Some of the large producing-consuming interests regard the Ore Association merely as a convenient clearing house, to determine values for such matters as the sliding scales for Ore royalties. The question of tonnage and allotments is to be taken up at the next meeting at Cleveland on the 3d proximo. Some of the producing interests which sell in the open market insist that allotments shall apply both to the tonnages which go to the plants owned by the large Steel companies and to the tonnage which is to be sold in the open market. It is estimated that less than 3,000,000 tons in all are to be sold, while the stock now on hand at lower lake ports and at furnaces is about 6,000,000 tons. It is figured that less than 15,000,000 tons need be brought down for the coming season to the spring of 1905.

The Bessemer Pig Iron market is exceedingly quiet and in the Pittsburgh district Iron is offered freely for May delivery at $13, at furnace, while Basic is offered freely at $12.75.

There is no truth in the reports that the United States Steel Corporation have purchased any Bessemer Pig during the past week for May delivery. We understand that the corporation are now producing Pig Iron at the rate of 175,000 tons per week, or more than ever before in their history. It looks as though all of the outside Iron contracted for this month, about 56,000 tons, will be delivered with possibly the exception of one or two small lots. It seems to be the policy of the corporation to keep the supply of Pig Iron close to the actual requirements in spite of a low stock, which does not even reach 150,000 tons, all kinds of Pig Iron included.

From nearly all the main distributing markets comes the complaint of dullness in Pig Iron, with, however, little actual pressure to sell. By the middle of next month, however, the question of covering requirements for the greater part of the third quarter will come up seriously. Until then there will be little more than maneuvering. Some irregularity has resulted in the Central West from a cut in freight rates ranging between 10 and 20 cents on Southern Pig Iron to points north of the Ohio River.

The contract for the first lot of castings for the Pennsylvania tunnel has not yet been placed. Some leading founders have practically withdrawn, because they decline to meet the prices which it is intimated have been named. Rumor has it that $27 per net ton for the finished tunnel sections has been bid.

The Cast Iron Pipe trade is quite busy. Among the larger work which is being figured on is 15,000 tons for Cincinnati.

Employment in the heavier lines of Finished Iron and Steel continues light, and yet the tonnage of Steel which goes into consumption is enormous. It is stated that the leading interest is producing from 185,000 to 187,000 tons of Ingots per week, against a record in the boom days of Rail, Plate and Beam consumption of 216,000 tons in one week. This is due to the enormous demand in the lighter products. Wire has had some record months lately, and even though it is pretty sure to fall off, now that the spring demand is drawing to a close, it will take full work for two months at the mills to put the broken stocks at distributing centers into normal shape. The Tin Plate mills are running practically up to the full capacity.

The tonnage of Sheets is much better than it has been, but prices are somewhat irregular. The same is true of Bars.

The export trade comes out in fits and starts. There is quite a good demand for Sheet Bars, the commitments in which, during the next few months, run at the rate of between 20,000 and 25,000 tons per month.

Old Material is weak in nearly all the leading markets.

The starting of the Pencoyd steel works and rolling mills is of some significance to the Eastern Iron trade. It is of interest to note that one of the principal contracts which it will work on is for 7000 tons of bridges for Japan, the contract having been taken by the American Bridge Company six months ago.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type. Declines in Italics.

At date, one week, one month and one year previous.

	Apr.27, 1904.	Apr.20, 1904.	Mar.30, 1904.	Apr.29, 1903.
PIG IRON:				
Foundry Pig No. 2, Standard, Philadelphia	$15.00	$15.00	$15.00	$21.25
Foundry Pig No. 2, Southern, Cincinnati	12.50	12.50	12.50	19.75
Foundry Pig No. 2, Local, Chicago	14.00	14.00	14.00	22.80
Bessemer Pig, Pittsburgh	*13.85*	14.20	14.35	20.35
Gray Forge, Pittsburgh	*12.85*	13.00	13.25	20.25
Lake Superior Charcoal, Chicago	*15.00*	15.25	15.25	25.00
BILLETS, RAILS, &c.:				
Steel Billets, Pittsburgh	23.00	23.00	23.00	30.50
Steel Billets, Philadelphia	25.00	25.00	25.00	....
Steel Billets, Chicago	24.00	24.00	24.00	32.75
Wire Rods, Pittsburgh	31.00	31.00	31.00	37.00
Steel Rails, Heavy, Eastern Mill	28.00	28.00	28.00	28.00
OLD MATERIAL:				
O. Steel Rails, Chicago	11.50	11.50	11.50	18.50
O. Steel Rails, Philadelphia	*13.75*	15.00	15.00	21.50
O. Iron Rails, Chicago	**17.00**	17.00	16.50	24.50
O. Iron Rails, Philadelphia	*18.00*	18.50	18.50	25.00
O. Car Wheels, Chicago	*14.00*	14.00	14.50	24.00
O. Car Wheels, Philadelphia	13.50	13.50	13.50	24.00
Heavy Steel Scrap, Pittsburgh	*13.00*	13.75	14.00	21.50
Heavy Steel Scrap, Chicago	*10.50*	11.50	11.00	18.50
FINISHED IRON AND STEEL:				
Refined Iron Bars, Philadelphia	1.48½	1.48½	1.48½	1.93½
Common Iron Bars, Chicago	*1.45*	1.50	1.50	1.80
Common Iron Bars, Pittsburgh	*1.35*	1.40	1.40	1.85
Steel Bars, Tidewater	1.49½	1.49½	1.49½	1.75
Steel Bars, Pittsburgh	1.35	1.35	1.35	1.60
Tank Plates, Tidewater	1.74½	1.74½	1.74½	1.85
Tank Plates, Pittsburgh	1.60	1.60	1.60	1.60
Beams, Tidewater	1.74½	1.74½	1.74½	1.73½
Beams, Pittsburgh	1.60	1.60	1.60	1.60
Angles, Tidewater	1.74½	1.74½	1.74½	1.73½
Angles, Pittsburgh	1.60	1.60	1.60	1.60
Skelp, Grooved Steel, Pittsburgh	1.35	1.35	...	2.05*
Skelp, Sheared Steel, Pittsburgh	1.35	1.35	...	2.10*
Sheets, No. 27, Pittsburgh	2.15	2.15	2.15	2.65
Barb Wire, f.o.b. Pittsburgh	2.50	2.50	2.50	2.60
Wire Nails, f.o.b. Pittsburgh	1.90	1.90	1.90	2.00
Cut Nails, f.o.b. Pittsburgh	1.75	1.75	1.75	2.15
METALS:				
Copper, New York	**13.37½**	13.12½	12.75	14.75
Spelter, St. Louis	**5.05**	5.05	4.95	5.50
Lead, New York	4.50	4.50	4.50	4.37½
Lead, St. Louis	4.40	4.40	4.42½	4.25
Tin, New York	*27.87½*	27.87½	28.35	30.05
Antimony, Hallett, New York	7.25	7.25	7.25	7.00
Nickel, New York	40.00	40.00	40.00	40.00
*Tin Plate, Domestic, Bessemer, 100 pounds, New York	3.64	3.64	3.64	3.99

* Iron.

Chicago.

FISHER BUILDING, April 27, 1904.—(*By Telegraph.*)

Dullness continues to characterize the markets in Chicago and territory tributary on nearly all lines of Iron and Steel. This has not reached a point where prices are materially reduced, at least officially, though it has brought about a tendency to make concessions that would not have been made in the month of March. The softness in prices has not been at all improved by a cut of 20c. in freight rate on Southern Pig Iron from the Ohio River northward, which went into effect Monday, April 25. Billet makers are finding some customers, the Standard Forgings Company, whose new plant at Indiana Harbor is now under way, consuming a considerable tonnage of Forging Billets of all sizes up to the heaviest, and the wagon skein and axle mills continuing to order in satisfactory quantity. Rolling Billets are weak in demand. There is nothing doing in Standard Section Steel Rails and very little in Lighter Sections. Some demand has developed for Relayers, which are being bought by newly projected electric railways, whose policy is to spend as little money as possible before earnings begin. No large orders for Structurals have been placed, though there is some encouragement in the fact that two Western roads have bought fair tonnages for bridges. Plates, while very quiet, are perhaps not as slow as they were two weeks ago. Sheet prices are being fairly well maintained, in spite of the fact that the supply exceeds the demand. Bar Iron has been very generally cut $1 per ton, the ruling price for large and desirable tonnages now being 1.45c., Chicago, instead of 1.50c., with the higher price asked for badly mixed specifications in car lots. Some disposition is noted on the part of agricultural implement makers to contract for their requirements in Merchant Steel up to July, 1905, and a num-

ber of such contracts have been placed. Current business is light, as it was expected to be, because of the relatively large tonnages placed some weeks ago. Merchant Pipe is in a waiting condition, warehousemen deferring further purchases until a better buying movement develops among consumers. Prices are very well maintained. The leading producer states that Boiler Tubes have improved in demand quite unexpectedly. A fair business is being done in Cast Iron Pipe. Old Materials are weaker in tone, though it is understood that the C., B. & Q., who sold about 3000 tons on Monday, secured good prices for their material. Lead, Spelter and Sheet Zinc have all advanced. Coke is still weak, owing to the quantity of demurrage Coke on track and to competition from Virginia furnaces that enjoy a low freight rate.

Pig Iron.—Railroads carrying Pig Iron to the Northern and Northwestern markets have promulgated a cut in rates to all points north of the Ohio River. The cut amounts to 20c. to Chicago, South Bend, Rockford, Moline and Mississippi River Points, 15c. to Milwaukee and Racine and other points which take the Milwaukee rate, and 10c. to Peoria, Galesburg, Bloomington and other Central Illinois points. The new schedule went into effect Monday, April 25, and will be in force up to and including June 30. Northern furnaces thus far have not announced any retaliatory cut in prices, though it is understood that prices are being made to-day at less than $14, Chicago, to favored customers where necessary to meet the new Southern competitive price. Southern Iron is still quoted on the basis of $10, Birmingham, for No. 2, with here and there a buyer who insists that lower quotations are made. The volume of business done is not satisfactory to the Iron interests, and the only wonder is that prices are maintained as well as they are in the face of the slack demand. Already buyers are beginning to forecast the market conditions as they see them by offering to contract for the second half of the year on the basis of $9.50, Birmingham, for No. 2, though no takers are found for such Irons. Basic Iron is still being offered by one Alabama interest on the basis of $10, Birmingham, as against $10.25, the ruling price. We repeat last week's quotations for car lots, Chicago, deducting 20c. per ton from all Southern Iron and reducing Lake Superior Charcoal 25c. per ton:

Lake Superior Charcoal	$15.00 to $15.50
Northern Coke Foundry, No. 1	14.50 to 15.00
Northern Coke Foundry, No. 2	14.00 to 14.50
Northern Coke Foundry, No. 3	13.50 to 14.00
Northern Scotch, No. 1	14.50 to 15.00
Ohio Strong Softeners, No. 1	15.30 to 15.80
Ohio Strong Softeners, No. 2	14.80 to 15.30
Southern Silvery, according to Silicon	14.65 to 15.65
Southern Coke, No. 1	.... to 14.15
Southern Coke, No. 2	.... to 13.65
Southern Coke, No. 3	.... to 13.15
Southern Coke, No. 4	.... to 12.65
Southern Coke, No. 1 Soft	.... to 14.15
Southern Coke, No. 2 Soft	.... to 13.65
Southern Gray Forge	.... to 12.40
Southern Mottled	.... to 12.15
Malleable Bessemer	14.00 to 14.50
Standard Bessemer	15.80 to 16.30
Jackson County and Kentucky Silvery, 6 to 10 per cent. Silicon	16.80 to 18.30
Alabama Basic	13.65 to 13.90
Virginia Basic	14.60 to 14.85

Billets.—A good demand exists for Forging Billets, and the leading Western producers profess to be indifferent as to orders for the next 60 days. Car Axle Billets are in quite active demand, largely through the purchases of the new Forging plant at Indiana Harbor. There is no diminution in the call for Billets for Wagon Skeins and Axles, as interests absorbing this material seem to be running to their utmost capacity. Prices are unchanged on the basis of: Forging Billets, 4 x 4 and larger, $24 per gross ton, Chicago, in carload lots; Axle Billets and Billets smaller than 4 x 4, $25.

Rails and Track Supplies.—Practically no business of moment is being booked on Standard Section Rails, although the air is full of inquiries, and the hope that these inquiries may come down to the basis of orders encourages the Rail interest to talk optimistically of the future. Some business is being taken in Light Rails for lumbering, mining and quarrying operations. Several new electric roads are buying Relaying Rails and second-hand apparatus throughout wherever possible in order to reduce the first cost of their installation and to get under way as quickly as possible, the intention being to get cars running in order to make a showing that will permit either the sale of the properties at good profits or the re-equipment later on with standard goods. An active demand is reported on Spikes, notwithstanding the fact that this is a season of the year in which the pulling up of Shimming Spikes is supposed to give the roads a ready supply of Spikes for current use. We repeat quotations as follows: Standard Section Rails, $28 per ton for 500-ton lots and greater; Light Rails, $25 to $27 per ton. Angle Bars are still quoted at 1.40c. to 1.50c., Spikes at 1.65c. to 1.75c., base, while Track Bolts have been reduced to 2.30c. to 2.35c., base, with Square Nuts, and 10c. to 15c. extra for Hexagon Nuts.

Structural Material.—There is no doubt that there are a multitude of operations, large and small, which were to have been put through this spring which are still waiting. Earlier in the year there was a promise that building operations would be much less expensive than in former years. While there has been some reduction in some materials and here and there a reduction in labor cost, the present cost of building in the city of Chicago is still considered to be too high to make such operations profitable, or at least high enough to lead the financial interests involved to delay in the hope that more favorable conditions may obtain later. If the general volume of business were larger delays would not be thought of, but business is slow enough in merchandising and manufacturing lines to allow extensions to wait without jeopardizing present business. The McClintic-Marshall Construction Company secured a contract from the Chicago & Western Indiana Railway for bridges aggregating about 1300 tons of Steel, and the Chicago & Northwestern Railway gave to the American Bridge Company orders for bridges aggregating about 700 tons. This is looked upon as an encouraging sign in the matter of railway bridge building, which is considered to be greatly in arrears. Prices are unchanged, both from store and from mill, as follows: I-Beams and Channels up to and including 15 inches and Angles 3 inches on one leg and larger, 1.76½c., Chicago; Tees, $1 per ton extra. Store prices on Structurals are as follows: Angles, Beams, Channels and Zees, base sizes, 2c. to 2.10c.; Tees, 2.05c. to 2.15c., either random lengths or cut to lengths 5 feet and over.

Plates.—There is no doubt that the Plate business is improving somewhat, but there is still much room for improvement, as Plates have been very weak for the last six months. Apparently boiler shops are buying a little more actively than they have been for some months, and there is more or less demand for Plates for bridge and structural work. Prices are maintained rigidly by association mills, and the cutting being done by independent mills is not of sufficient moment to disturb the equanimity of associations. Prices are unchanged. We quote, carload lots, from mill, f.o.b. Chicago: Tank Steel, ¼-inch and heavier, 1.76½c.; Flange Steel, 1.86½c.; Marine, 1.96½c.; Universal Mill Plate, 1.76½c. to 1.81½c.; 3-16 inch Tank, 1.86½c.; Nos. 7 and 8, 1.91½c.; No. 9, 2.01½c.; No. 10, 1.91½c. to 1.96½c.; No. 11, 1.96½c. to 2.01½c.; No. 12, 2.01½c. to 2.06½c. Store prices on Plates have been reduced as follows: Tank Plate, 100 inches wide or less, ¼-inch and heavier, 2c. to 2.10c.; 3-16 inch, 2.05c. to 2.15c.; Nos. 8 and 10, 2.10c. to 2.20c.; Flange quality, 25c. per 100 lbs. extra.

Sheets.—The determination on the part of the leading producer and on behalf of independent producers, who are in an association agreement to maintain prices, does not prevent these interests from meeting lower prices named by independent mills when it is necessary to do so rather than lose business. There is a good deal of cutting on Narrow Sheets by some independents, amounting to from $1 to $3 per ton below association prices, but this competition has not reached a point where it will lead the larger producers to lower their rates, and it is not likely to, as fully 90 per cent. of the producing capacity of the country is represented in associations. Association prices are as follows: Nos. 9 and 10, 2.01½c.; Nos. 11 and 12, 2.06½c.; Nos. 13 and 14, 2.11½c.; Nos. 15 to 17, 2.16½c.; Nos. 18 to 21, 2.21½c.; Nos. 22 to 24, 2.26½c.; Nos. 25 and 26, 2.31½c.; No. 27, 2.36½c.; No. 28, 2.46½c.; No. 29, 2.56½c.; No. 30, 2.71½c. Store prices on Sheets, 16 gauge and heavier, have been revised and reduced, as follows: Nos. 8 and 10, 2.10c. to 2.20c.; No. 12, 2.15c. to 2.25c.; No. 14, 2.25c. to 2.35c.; No. 16, 2.30c. to 240c; Nos. 18 and 20, 2.50c. to 2.55c.; Nos. 22 and 24, 2.55c. to 2.60c.; No. 26, 2.65c. to 2.70c.; No. 27, 2.75c. to 2.80c.; No. 28, 2.80c. to 2.85c.; No. 29, 2.95c. to 3c.; No. 30, 3.10c. to 3.15c. Galvanized Sheets are still quoted at from 80 to 80 and 5 discount, Pittsburgh, in car lots. Store prices on Galvanized Sheets remain unchanged at 75 and 7½ to 75 and 10 per cent. discount.

Bars.—While 1.50c. is still quoted nominally on Iron Bars, the bulk of the business coming is being taken at 1.45c., base, half extras, in carload lots. This cut in price was precipitated by a new mill whose eagerness to secure tonnage led them to shade the current market, and it is being promptly met by the older concerns in order to retain their regular trade. Steel Bars remain unchanged at the basis of 1.35c., Pittsburgh, or 1.51½c., Chicago, carload lots, and trade in both Iron and Steel Bars continues to be good, although not what it was the week previous. Hoops are quiet, as is to be expected from the extremely large tonnages that were placed by interests just before the last advance. Steel and Iron Bars, Hoops and Bands are all sold with extras of $1 per ton for less than carload lots, and the usual additional charges for less than 2000 lbs. and less than 1000 lbs. of a size. Store prices are as follows: Iron Bars, 1.75c., base, full extras; Steel Bars, 1.70c. to 1.80c., base, half extras; Hoops, 2.10c. rates, full extras.

Merchant Steel.—The advance in price on Railway Spring Steel, referred to last week, has not yet apparently assumed definite form, or if it has Chicago interests have not been notified. In Agricultural Implement Steel the month of April is naturally behind that of March, as the large harvesting machine companies make practically their last purchases for spring manufacture in the month of March, and

April purchases are only in the nature of quick pick ups. This being the case, the falling off in business during this month as compared with last is not indicative of a diminution in natural demand. Prices remain unchanged, as follows: Open Hearth Spring Steel to the general trade, 2c. to 2.25c.; Smooth Finished Machinery Steel, 1.76½c. to 1.81½c.; Smooth Finished Tire, 1.71½c. to 1.76½c.; Sleigh Shoe, flat, 1.56½c. to 1.61½.; Sleigh Shoe, concave and convex, 1.66½c. to 1.71½c.; Cutter Shoe, 2.25c. to 2.35c.; Toe Calk Steel, 2.06½c. to 2.11½c.; Crucible Tool Steel, 6½c. to 8c.; special grades of Tool Steel, 13c. and up; Shafting at 52 per cent. in car lots and 47 per cent. in less than car lots.

Merchant Pipe.—Mills have pretty generally caught up with orders and there is again an active competition for business. The postponement of consumption of Pipe owing to a delayed spring is inducing large dealers and buyers generally to delay further purchases until the consuming demand becomes more active. Prices are unchanged, as follows:

	Steel Pipe.		Guar. Wr'ght Iron.	
	Black. Per cent.	Galv. Per cent.	Black. Per cent.	Galv. Per cent.
⅛ to ⅜ inch	66.35	56.35	64.35	54.35
½ inch	69.35	59.35	67.35	57.35
¾ to 6 inches	73.35	63.35	71.35	61.35
7 to 12 inches	69.35	59.35	66.35	56.35

Less than carloads, 12½ per cent. advance.

Boiler Tubes.—The leading producers report a very satisfactory increase in demand on sizes used by boiler manufacturers and contract boiler shops. The discounts named below are those of the leading producer, but there are large interests represented in this Western market in the sale of Welded Charcoal Iron Tubes that are naming as low as 45 per cent. discount on 1 to 2½ inch diameters, and 55 per cent., Chicago, on 2¾ to 6 inch diameters, both in carload lots. Official prices are as follows:

	Steel.	Iron.	Seamless steel.
1 to 1¼ inches	43.35	40.80	53.35
1¾ to 2¼ inches	55.85	38.35	40.35
2½ inches	58.35	43.35	40.35
2¾ to 5 inches	64.35	50.85	up to 4 in. 48.35
6 to 13 inches	55.85	38.35	...

Agreed store discounts for delivery from store, Chicago, are as follows:

	Steel.	Iron.	Seamless steel.
1 to 1¼ inches	40	35	37½
1¾ to 2½ inches	50	32½	35
2¾ to 5 inches	60	45	45
6 inches and larger	50	32½	..

Cast Iron Pipe.—A fair business is being booked both by leading producers and independents, but not what it should be at this time of year. We repeat last week's quotations, as follows: $27 for 4-inch Water Pipe, $26 for 6 to 12 inch and $25 for larger than 12-inch, with $1 extra for Gas Pipe.

Old Material.—Great diversity of opinion exists as to the real market on Old Materials. Dealers who are short insist that our prices are much too high, while railroad purchasing agents are equally emphatic that higher prices are being obtained every day than the ones quoted by us. A thorough canvass of the whole situation, including both buyers and sellers, leads to the conclusion that prices are weakening somewhat, though not as much as might have been expected from the apparent conditions of supply and demand. We reduce Heavy Melting Scrap, Mixed Steel, Dealers' Forge and Agricultural Malleable each 50c. per ton. On some of the other lines, such as Car Wheels, our quotation must be taken as nominal, because there is not sufficient present demand to make a market. The market is weak and the small freight reduction made in Southern Iron does not help it. Prices are about as follows, per gross ton, Chicago:

Old Iron Rails	$17.00 to $17.25
Old Steel Rails, 4 feet and over	13.00 to 13.50
Old Steel Rails, less than 4 feet	11.50 to 12.00
Heavy Relaying Rails, subject to inspection	23.00 to 24.00
Heavy Relaying Rails, for side tracks	18.00 to 20.00
Old Car Wheels	14.00 to 14.25
Heavy Melting Steel Scrap	10.50 to 11.00
Mixed Steel	9.00 to 10.00

The following quotations are per net ton:

Iron Fish Plates	$13.50 to $14.00
Iron Car Axles	17.25 to 17.50
Steel Car Axles	15.50 to 16.00
No. 1 Railroad Wrought	12.50 to 13.00
No. 2 Railroad Wrought	11.50 to 11.75
Shafting	13.50 to 14.00
No. 1 Dealers' Forge	9.25 to 10.00
Wrought Pipe and Flues	9.00 to 9.25
Iron Axle Turnings	8.50 to 9.00
Soft Steel Axle Turnings	8.50 to 9.00
Machine Shop Turnings	7.50 to 8.00
Cast Borings	4.50 to 5.00
Mixed Borings, &c	4.50 to 5.00
No. 1 Mill	7.75 to 8.25
Country Sheet	7.25 to 7.50
No. 1 Boilers, cut in Sheets and Rings	9.00 to 9.50
Heavy Cast Scrap	11.00 to 11.50
Stove Plate and Light Cast Scrap	9.00 to 9.50
Railroad Malleable	10.00 to 10.50
Agricultural Malleable	9.00 to 9.50

Metals.—A firm tone is manifested in nearly all lines. Copper is unchanged but firm in price at 13½c. for Casting and 13¾c. for Lake; Pig Tin, 29½c. to 29.60c.; Pig Lead, 4.45c. for 50-ton lots, 4.60c. for car lots and 4.80c. to 4.85c. for small lots. Spelter has advanced to 5.20c. to 5.35c. Sheet Zinc has been boosted 30c. per 100 lbs., and is now quoted at 6.20c. in car lots, Chicago, made up of 600-lb. casks, and 6.45c. to 6.50c. on less than car lots. The firmer feeling in Ingot Copper and the resuming of work in local Brass foundries are leading to a stronger market for Old Copper and Brass, though prices are unchanged. Old Metals are steady at previous prices. We quote: Copper Wire and Heavy, 11¾c.; Copper Bottoms, 10¾c.; Copper Clips, 10⅞c.; Red Brass, 10¾c.; Red Brass Borings, 9c.; Yellow Brass, Heavy, 8⅝c.; Yellow Brass Borings, 6⅝c.; Light Brass, 6⅛c.; Tea Lead, 4c.; Zinc, 3¾c.; Pewter, No. 1, 18½c.; Block Tin Pipe, 24c.

Coke.—Until the tracks are relieved of the great number of cars of what is popularly known as demurrage Coke one cannot look for a strong Coke market in Chicago. During the week a determined effort was made to dispose of 72-hour Connellsville Foundry Coke from the Uniontown district on the basis of $1.85, at the ovens, or $4.50, Chicago, without takers. This is explained both by the fact that very little Coke is now being bought and also by the low priced Coke that is being offered from the Virginia district that enjoys a low L. & N. freight rate. These Virginia Cokes are offered at $2 to $2.25, at the ovens, which with the $2.25 freight rate puts them at $4.25 to $4.50, Chicago, and as the Cokes are known to be low in sulphur and of good structure, the Connellsville regions are finding difficulty in placing much business in this market. Connellsville Coke is supposed to be held at from $2.15 to $2.50, at the ovens, which would be $4.80 to $5.15, Chicago, but it is certain that very little Coke has been disposed of at this price in this immediate market.

C. E. Louis, the Rookery, Chicago, has been appointed by the Tutwiler Coal, Coke & Iron Company, Birmingham, Ala., as sales agent for Vanderbilt Pig Iron in Chicago and the Northwest.

Garson Myers will terminate May 1 his connection with the Crucible Steel Company of America, for whom he has for four years been manager of sales in the agricultural Steel department at Chicago. Previous to the formation of the Crucible Steel Company Mr. Myers was for ten years with Anderson, Dupuy & Co. He will engage in the sale of Steel products in Chicago, his principal *clientele* being naturally the great agricultural implement firms of the West, with whom he is in close personal touch. He is desirous of making affiliations with mills who have goods to sell to this trade. He has established temporary offices at 1117 Monadnock Block, Chicago. Upon his withdrawal, the Crucible Steel Company of America will transfer their Chicago agricultural sales department to their Pittsburgh headquarters.

Philadelphia.

FORREST BUILDING, April 26, 1904.

The Iron and Steel markets have not maintained the very moderate improvement which was noticeable during the past four or five weeks. Prices are about the same, and immediate business is fairly satisfactory, but forward buying is unusually slow. The pause may not amount to much, as all lines are being worked as closely as possible; but, unless new business can be secured in sufficient volume to offset deliveries, it is only natural that the feeling will be one of depression. So far the demand has been pretty well maintained, but the absence of inquiries for large lots and the smallness of the orders are rather discouraging, being reflected in slightly easier prices. There is no quotable decline, but there are more sellers at the inside prices and fewer that ask the full rates, which is regarded as one of the proverbial straws. There is a good deal of work in prospect, work that must and no doubt will be done before long, but it's the waiting that does the mischief. When mills and furnaces are sold for weeks and months ahead, an interim of dullness makes very little impression; but when they are all hungry for breakfast, it is no great satisfaction to be assured that there will surely be something for supper, and especially when the waiting line is a long one; and this appears to be the present situation in Iron and Steel. At the moment it is impossible to see beyond the present. There is a chance of a fresh demand starting up, and equally so of a continued dullness, either of which would be immediately reflected in prices. The Pencoyd Works have partially resumed operations; a portion of the order for castings for the Pennsylvania tunnel in New York City is on the point of being given out, besides which other important contracts are on the point of materializing; but all these are for later periods. Two or three months at the earliest, and possibly six months or a year, will elapse before they get into the mills and foundries as actual business. There is no anxiety about next year; it is the next six months that is the source

of anxiety and uncertainty. Six months from now the situation will be so clear that there need be no guessing whether business is going to be better or worse. The things that are in doubt to-day will be demonstrated facts six or seven months hence, and the die will be cast for better or worse. This naturally has a tendency to restrict business temporarily, although the current demand may be large enough to keep things pretty near to their present level pending definite knowledge in regard to matters which are at present beyond any human foresight.

Pig Iron.—There is very little to be said about Pig Iron, except that the demand is light. Prices are supposed to be unchanged, but as there is no market for large lots, it follows that the feeling is a little weak. Such lots as are called for command quoted rates, because there is no pressure to sell, but if there was any pressure prices would easily yield, as buyers are not in the mood to make heavy engagements. A good deal of Iron is being taken, however, and for the time being furnaces are in a good position to withstand a temporary slackening in the demand, but much will depend on what may be done during the next few weeks. An output of probably 350,000 tons per week represents a large volume of business, and to absorb a tonnage like that will require more buying than is indicated by the present outlook. Of course it may come, but there is a disposition to be on the safe side until there are substantial evidences that it is coming, and the longer the delay the stronger will be the belief in an indefinite postponement. The immediate situation, as we said before, is not particularly bad, except as regards the uncertainty in the outlook. Those who have good brands for sale at inside quoted rates, and sometimes at a little more, have no difficulty in filling their order books for May and June, but at present they cannot get business much beyond the months named; consequently there is nothing more to be said on that point. Sales have been in most cases at prices within the following limits for deliveries in Philadelphia or equivalent points:

No. 1 X Foundry	$15.75 to $16.00
No. 2 X Foundry	15.00 to 15.25
No. 2 Plain	14.50 to 14.75
Alabama No. 2, rail shipment	14.25 to 14.50
Alabama No. 2, on dock	13.50 to 13.75
Standard Gray Forge	13.75 to 14.00
Ordinary Gray Forge	13.00 to 13.25
Basic	14.00 to 14.10

Steel.—The demand has fallen off considerably, although mills are fairly well sold up for the next month or two. Prices are easy at about $25, delivered; probably a little below that figure for good sized lots, July and later deliveries.

Plates.—The demand does not improve as it ought to do at this season, although in the meanwhile mills are maintaining a fair average of what they have been doing during the past few weeks. Some lines of business are doing very well, but the large consumers are falling behind and are not taking orders enough to warrant very favorable hopes in regard to their requirements for Plates during the later portion of the year. Prices are unchanged, as follows:

	Carloads. Cents.	Part carloads. Cents.
Tank Steel, ¼ inch and heavier	1.73½	1.78½
Tank Steel, 3-16 inch	1.83½	1.88½
Tank Steel, Nos. 7 and 8, B. W. G.	1.88½	1.93½
Tank Steel, Nos. 9 and 10, B. W. G.	1.98½	2.03½
Flange or Boiler Steel	1.83½	1.88½
Commercial Fire Box Steel	1.93½	1.98½
Still Bottom Steel	2.03½	2.08½
Locomotive Fire Box Steel	2.23½	2.28½
Plates over 100 to 110 inches	.05 per lb. extra.	
Plates over 110 to 115 inches	.10	"
Plates over 115 to 120 inches	.15	"
Plates over 120 to 125 inches	.25	"
Plates over 125 to 130 inches	.50	"
Plates over 130 inches	1.00	"
All sketches (excepting straight taper plates varying not more than 4 inches in width at ends, narrowest end being not less than 30 inches)	.10	"
Complete Circles	.20	"

Shell grade of Steel abandoned.

Structural Material.—A fair amount of business has been entered during the past few weeks, and a great many inquiries are coming in for work that seems likely to be commenced in the near future. In the meanwhile the mills are doing fairly well on day to day orders, and to some extent on back log orders, so that the feeling is quite hopeful in regard to the remainder of the year. Prices unchanged: Beams, Channels and Angles, 1.73½c. to 1.85c., according to specifications, and small Angles, 1.50c. to 1.55c.

Bars.—The demand is not as active as it was two or three weeks ago, but mills are busy, although they are not making much money, some none at all. A great deal of business was taken before the advance, so that many of the mills are working on low priced products and high priced raw materials. Prices are steady and unchanged at 1.48½c. to 1.55c., including both Iron and Steel, and Skelp at 1.45c. to 1.50c., seller's mill, for Grooved, and a tenth more for Sheared.

Sheets.—Business has fallen off considerably, and unless for some unfilled orders, mills would find it difficult to run more than part time. Prices are easier and depend a great deal on quantity and character of material required.

Old Material.—The demand has fallen off considerably, and prices are easier all around. Steel is specially weak and it would be difficult to realize on large quantities at over $14, while some buyers think that figure is too high. The entire list is weak, however, and prices hard to quote with exactness. Bids and offers are about as follows for deliveries in buyers' yards:

No. 1 Steel Scrap	$13.75 to $14.25
Low Phosphorus Scrap, nominal	18.00 to 18.50
Old Steel Axles	18.00 to 19.00
Old Iron Rails	18.00 to 18.50
Relaying Rails	21.00 to 22.00
Old Iron Axles	21.00 to 22.00
Old Car Wheels	13.50 to 14.00
Choice Scrap, R. R. No. 1 Wrought	17.50 to 18.00
Yard Scrap	16.00 to 16.50
Machinery Scrap	13.00 to 13.50
No. 2 Forge Fire Scrap	13.00 to 13.50
No. 2 Forge Fire Scrap (Ordinary)	10.00 to 10.50
Wrought Turnings	10.00 to 10.50
Axle Turnings, Choice Heavy	12.00 to 12.50
Cast Borings	7.50 to 7.75
Stove Plate	12.00 to 12.50
Wrought Iron Pipe	12.75 to 13.00

Poulterer & Co., 410 Bullitt Building, Philadelphia, have puchased the McCullough Iron Company's rolling mill plant at North East, Md., and will start at once to dismantle the works.

Cincinnati.

FIFTH AND MAIN STS., April 27, 1904.—(*By Telegraph.*)

Pig Iron.—This has been an exceedingly quiet week, with the market holding firm. The bulk of the business transacted was in comparatively small lots, as most consumers are pretty well bought up and the majority of furnaces sold up for the first half. Gray Forge and other low grades of Iron are still very hard to obtain on account of their scarcity. The rolling mills throughout the country have been making numerous inquiries for these grades, but apparently with little success. One sale of 400 tons of Gray Forge was reported made on the basis of $9.25, Birmingham, and there have been quite a number of small lots sold to several Pipe companies. Another sale of 600 tons of No. 2 Soft and No. 4 Foundry for Indianapolis delivery is said to have been sold on a $10, Birmingham, basis. Sellers generally feel that the tone of the market is good and they are not at all uneasy over the temporary lull resulting from conditions that cannot be overcome. The meeting at Columbus last Friday of furnacemen was without results and another has been called at Cleveland on May 4. An effort will then be made to form a club representing the different interests, for mutual benefit. Freight rates from Hanging Rock district to Cincinnati, $1.15, and from Birmingham, $2.75. We quote, f.o.b. Cincinnati, as follows:

Southern Coke, No. 1	$13.00 to $13.25
Southern Coke, No. 2	12.50 to 12.75
Southern Coke, No. 3	12.00 to 12.25
Southern Coke, No. 4	11.50 to 11.75
Southern Coke, No. 1 Soft	13.00 to 13.25
Southern Coke, No. 2 Soft	12.50 to 12.75
Southern Coke, Gray Forge	11.50 to 11.75
Southern Coke, Mottled	11.25 to 11.50
Ohio Silvery, No. 1	16.15 to 16.40
Lake Superior Coke, No. 1	14.15 to 14.40
Lake Superior Coke, No. 2	13.65 to 13.90
Lake Superior Coke, No. 3	13.15 to 13.40
Car Wheel and Malleable Irons.	
Standard Southern Car Wheel	$17.00 to $17.50
Lake Superior Car Wheel and Malleable	17.00 to 17.50

Coke.—The Coke market is fairly active, although most of the sales made are in small lots. Consumers generally have what they need and are not purchasing beyond to any great extent. We quote, f.o.b. ovens: West Virginia Coke, $2 to $2.10; Connellsville, $2 to $2.25.

Plates and Bars.—The Bar market is showing more strength than either Structural Iron or Plates. Taken as a whole, however, the demand is light, and there is little doing. We quote, f.o.b. Cincinnati: Iron Bars, in carload lots, 1.40c., with half extras; the same in smaller lots, 1.70c., with full extras; Steel Bars, in carload lots, 1.48c., with half extras; the same in smaller lots, 1.80c., with full extras; Base Angles, 1.73c., in carload lots; Beams and Channels, in carload lots, 1.73c.; Plates, ¼-inch and heavier, 1.73c., in carload lots; in smaller lots, 2c.; Sheets, 16-gauge, in carload lots, 2.05c.; in smaller lots, 2.60c.; 14-gauge, in carload lots, 1.95c.; in smaller lots, 2.50c.; Steel Tire, ¾ x 3-16 and heavier, 1.68c., in carload lots.

Old Material.—Dealers are somewhat discouraged at the outlook and report trade as almost nothing. They say the railroads are dumping a large amount of Scrap on the market, which has to a great extent disorganized things. We quote dealers' prices, f.o.b. Cincinnati, as follows: No. 1 Wrought Railroad Scrap, $11 to $11.50 per net ton; No. 1 Cast Scrap, $9.25 per net ton; Iron Rails, $14.50 per gross ton; Steel Rails, rolling mill lengths, $11 to $11.50 per gross ton; Iron Axles, $15 per net ton; Car Wheels, $11 to $11.50 per gross ton; Heavy Melting Scrap, $11.50 per gross ton; Low Phosphorus Scrap, $11.50 to $12 per gross ton.

Cleveland.

CLEVELAND, OHIO, April 26, 1904.

Iron Ore.—The partial agreement among the Ore producers as to the prices which are to be charged during the year has given a livelier turn to the lake freight market. The trend is not altogether to the liking of the vessel interests. The cut of $1 a ton in the Ore price has given them a chill. The vesselmen had been talking about artificial means of shortening the season of navigation to make a better demand for boats in the interest of higher Ore rates. The frozen channels between the upper and the lower lakes helped them in that respect. The cut in the price of Ore makes it all the more important that there shall be a short season. The United States Steel Corporation during the past two seasons have been the big factor in lake rates, dictating them almost entirely. The question which is now being discussed with much fervor in lake circles is what action the corporation will taken this year. Nothing has been done so far in the way of making contracts or even "going" charters.

Pig Iron.—The buying of Foundry Pig Iron has been a little better as to spot purchases, but nothing has yet been done for delivery after July 1. The market here is developing spurting tendencies, with the present showing one of those spurts. Southern producers are trying to dispose of some of their material in this market, but without success, as the home supply seems to be adequate to the needs and Southern prices are out of line. Buying for the second half is postponed pending the final settlement of the Ore question. Producers are not disposed to sell for less than current prices, as they say that the drop in Ore prices had been discounted since January 1 and material had been sold on that basis. The call for Bessemer has about stopped. The failure of the Steel Corporation to exercise their option was expected to result in sales of that same amount later on. The understanding now in Bessemer circles is that the purchase will not be made, the corporation getting their supply from their own furnaces. The demand for Basic has also about subsided. There is hardly enough doing to establish prices. The Coke market is a little easier, because the railroads have been making better deliveries. Old orders are being caught up with and new orders are being delivered promptly. Prices hold at $2.25 to $2.40 for good 72-Hour Foundry Coke and $2 to $2.15 for High Sulphur Cokes. The best Furnace Coke is bringing $1.50 to $1.65. We quote Pig Iron prices, f.o.b. cars, Cleveland, as follows:

Northern Coke, No. 1 Foundry	$14.25 to $14.50
Northern Coke, No. 2 Foundry	13.75 to 14.25
Northern Coke, No. 3 Foundry	13.25 to 13.50
Southern Coke, No. 1 Foundry	14.35 to 14.60
Southern Coke, No. 2 Foundry	13.85 to 14.10
Southern Coke, No. 1 Soft	14.35 to 14.60
Southern Coke, No. 2 Soft	13.85 to 14.10
Jackson County, 8 per cent. Silicon	16.50 to 17.00
Hanging Rock Charcoal, No. 1	.... to 23.45
Southern Charcoal, No. 1	19.50 to 20.00
Lake Superior Charcoal	16.50 to 17.00

Finished Iron and Steel.—The market during the past week has been rather quiet. The market of late has been progressing by spurts. In some features of the trade during the past week the market has seen a return of one of those spurts, otherwise it has been dull. In Bars the buying has been inclined to be a little heavier. The contract booking has been resumed to a certain extent and the shipment, against former contracts, has been further increased. In Hoops there is a little stronger tone. The market, on less than carload lots, has advanced $2 a ton to 1.50c., Pittsburgh. Carloads hold at 1.40c., with some buying coming in anticipation of an advance in the carload price also. The booking on contracts during the past week has been rather heavy. There is also a little stronger tone to the Pipe market, and some talk of a further advance in those prices. The increased buying during the week is said to be hypothecated upon that belief. The Sheet trade has taken another little turn for the better. The slowness which was manifest a week ago seems to be giving way to the spring trade, which is assuming larger proportions. The tendency is not strongly on the up grade as yet, and the market finds many checks in the incidental hindrances which present themselves. Prices, however, are not weakening, but rather hold their own. The quotations continue to be: For No. 27 Black Sheets out of stock as a basis, 2.50c.; for No. 27 one pass cold rolled in car lots at the mill, 2.25c. to 2.35c.; for No. 16 to No. 20 Galvanized Sheets out of stock, 75, 10 and 5 off list, and for No. 22 and lighter, 75, 10 and 7½ off list. The buying of Rails has been confined entirely to the lighter grades, this market presenting a steady run of orders on that line. Trading in Structural Steel has been steady, but not especially strong. The principal feature of the trade has been specification against former contracts. The market has seen but little new business during the week. The market for Plates has been rather steady, although dull. Spot buying this week is of a better nature and specifications against contracts have improved.

Old Material.—The market has been easy, with a weakening tone to some of the features and with no pronounced strength in any quarter. Prices slightly revised are quoted as follows, all gross tons: Old Steel Rails, $13.50 to $14.50; Old Car Wheels, $13 to $14; Heavy Melting Steel, $13 to $14. All net tons: Cast Borings, $5 to $5.50; No. 1 Railroad Wrought, $12.50 to $13; No. 1 Busheling, $11.50; Wrought Turnings, $7.50 to $8; Iron Car Axles, $18; No. 1 Cast, $11 to $12; Stove Plate, $9.

Birmingham.

BIRMINGHAM, ALA., April 25, 1904.

The conditions reported last week still prevail. Business has not been brisk. There were plenty of rumors afloat, but solid facts were tied up. From a Western point came a letter stating that two of the Birmingham interests were offering Iron for delivery the balance of the year on the basis of $9.50 for No. 2 Foundry. But the interests mentioned had made no price beyond June, and would make no offer unless it was an advance over current values. The writer knows that one of these interests had priced for June on the basis of $10.50, because their order book was full, and they wanted no further business at current values. This is mentioned to show the contradictory information that greets one in pursuit of information.

While cut prices are reported, and may be made in certain cases to effect certain purposes, the fact remains that those who are in the market as sellers have been asking and obtaining $10 as minimum for No. 2 Foundry. Some interests are asking $10.25 for No. 2 Foundry, and they say they are getting that for all they sell. Your correspondent knows of some business concluded on that basis, and also knows that some of the interests are quoting at $10.50, and are declining all business below these figures. It is a way of saying "we are not in the market." These parties are well sold up, and do not care to take any business for delivery during the second half, because the annual convention of the United Mine Workers will convene in June, and there is no forecasting their action, and up to July there can be no question as to the fact of the furnaces being pretty well sold up. There is very little room for further loading for this delivery, and there is an indispisition to sell for delivery that is uncertain.

There were no large orders on the market; but the inquiry the latter part of the week had perceptibly increased. The largest transaction concluded was for 2500 tons on a basis of $10 for No. 2 Foundry. One local buyer paid $10.75 for No. 1 Soft, and a sale of No. 2 Soft was reported at $10.25. Gray Forge, if available, would bring $9.25. No. 3 Foundry is not in active demand, and is quoted at $9.50, with an occasional rise to $9.75. Basic Iron is yet quotable at $10, but there is very little being done in it.

Affairs are now running smoothly at the Steel works, and they now have a full force of men, and are turning out Steel Rails to fill contracts made some time back.

The scarcity of common labor has added to the difficulties of a satisfactory start of the Bar and Rod mills, but they are gradually getting things righted. There are so many things in the way of improvements going on here that keen competition for common labor has enhanced the price of it, and some of our industries are hampered by the loss of labor tempted to leave them by a rise in their wages. Railroad building for the time being has absorbed all the available loose labor, and has secured some at the expense of some of our industries.

Shipments have been somewhat on the decrease of late in order that purchasers may take advantage of the lately reduced rates to certain points north of the Ohio River, which reduction goes into effect to-day and amounts to 20c. per ton. The reduction does not cover all Western points. The Central of Georgia Railroad has lowered rates on that line 25c. per ton, but affecting only Philadelphia. It remains to be seen what effect, if any, these reductions will have on the buying. If it gives any encouragement in that direction an enhancement of values is certain.

The Pipe works are still in the swim so far as business is concerned, and are competitors in bidding for further large quantities of work. They certainly will secure some of the contracts to be let, and they will be a factor again in the market to cover further requirements.

Railroad building still continues, but the most of it is in the mineral region, and the extension is to develop properties that give promise of being valuable feeders to the road. The Louisville & Nashville Railroad Company have just completed what is called their Cane Creek branch. This branch will make accessible valuable Coal and mineral properties and largely add to the tonnage of the road. In addition to this, another branch is being built in the Altoona district, and it has been decided to build a branch from Selma to Blocton, and thus give us two roads to Selma, one of which will pass through a fine mineral section.

Your correspondent was shown furnace results the past week by two interests that speak very flatteringly of the furnace management. Three furnaces averaged a total of 731 tons daily for the week; one furnace, built for results, approximating 350 tons daily for the week. Another interest showed results for the week equally as good if not better. In but one case was there any output as low as No. 3

Foundry. It was all high grade Foundry. All the furnaces are not doing this well, and after a little there may be some low grade to offer.

The usual report comes from the various shops as to the condition of business, and it is gratifying to say that the prospects continue to be good, and it is now coming in in very good volume. While it is not as large as last year, it is, as yet, respectable in volume.

Pittsburgh.

PARK BUILDING, April 27, 1904.—(*By Telegraph.*)

Pig Iron.—The Pig Iron market continues exceedingly quiet, especially as to Bessemer, for which there is practically no inquiry. Unless we have an improved demand some of the blast furnaces that started up recently will have to go out of blast or else pile their Iron. Prices, on the whole, are weak. Bessemer for May shipment is freely offered at $13, Valley, or $13.85, Pittsburgh. For a round tonnage and extended delivery it is possible that this price could be shaded, as there is a good deal of pressure on the part of furnaces to sell. Foundry Iron is very quiet, Northern brands of No. 2 being offered at $12.75 to $13, Valley, or $13.60 to $13.85, Pittsburgh. Forge Iron is lower in price and Northern brands are held at $12.85 to $13, Pittsburgh. We note a sale of 1000 tons at the lower price for May delivery. A sale of 8000 tons of Northern Forge Iron to the United States Cast Iron Pipe & Foundry Company, for third quarter delivery, is reported at $13, delivered at their Scottdale works. The Iron comes from a nearby furnace, the freight rate being 40c. a ton. No Southern Forge or Foundry Iron is coming into this market, but we are advised that Southern furnaces have practically no Iron to offer this side of July.

Steel.—Very little new tonnage in either Billets or Sheet Bars is being placed, but the Steel mills are pretty well filled up on contracts on sliding scale basis. Under these contracts consumers of Billets and Bars get their Steel $2 to $3 a ton under the official prices, which are $23, Pittsburgh, for Bessemer and Open Hearth Billets, and $24 for long Sheet or Tin Bars.

(*By Mail.*)

While very little was done at the Ore meetings held in New York last week, it can be stated that the Ore interests are closer together than at any time since negotiations were first opened. Concessions have been made by the United States Steel Corporation and other Steel interests, who agree to a larger cut in prices of Ore than at first proposed. On the other hand, the independent Ore interests have conceded the point that producers of Ore who are also consumers should be allowed to mine their entire requirements and not be compelled to buy in the market. In view of these concessions, which are important, it is safe to assume that the Ore Association will probably be renewed for this year at the next meeting, to be held in Cleveland on Tuesday, May 3. While nothing final has been done in regard to prices, it is probable that the basis of Old Range Ores this year will be $3.50 a ton, against $4.50 last year, or a reduction of $1 a ton. Mesaba Ores are likely to be about $3.25 a ton. It is estimated that there are now piled up on the various docks about 6,000,000 tons of Ore, sufficient supply to run the furnaces to about July 15 or later. In view of this, the amount of Ore to be brought down this year will be very much less than last year and may not exceed 15,000,000 tons. The general market on Iron and Steel continues quiet, demand for all lines having fallen off considerably in the past two weeks. In regard to Pig Iron, it may be said that at the rate at which the furnaces are now turning out Iron in the face of the present quiet demand it is not unlikely that some stacks may have to blow out in May or else pile their Iron. Some of the blast furnaces are running as light as possible, notably those having Steel plant connections, and they will continue to run in this way as long as they can in preference to blowing out. There is no doubt that the refusal of the Steel Corporation to buy any more Iron had a depressing influence on the market, though why this should be so is hard to understand. The option which the Steel Corporation had was only for 40,000 tons, less than a two days' supply for the Steel Corporation, and too much importance has been attached to their refusal to buy this Iron. The Steel market is quiet as far as demand goes, but the mills are pretty comfortably filled with contracts. In Finished Iron and Steel there is nothing important to note, demand being only moderate. There is some unevenness in prices of Sheets, due to the recent cut in wages.

The final papers for the sale of the Clairton Steel Company plant to the United States Steel Corporation have not yet been signed, but will be to-day or to-morrow. The more this deal is studied the more apparent it becomes that the Steel Corporation have secured the plant on very advantageous terms. Possession will be taken on May 1, and it is probable the third blast furnace at Clairton will be started early in May.

Ferromanganese.—There is not much inquiry and prices seem weaker. We quote domestic 80 per cent. Ferro at $41.50 to $42, delivered. No English Ferro has come into this market for some time, on account of the low prices ruling for domestic.

Muck Bar.—There is very little demand for Muck Bar and prices are weaker. We quote best domestic grades at $25.50 to $26, Pittsburgh.

Wire Rods.—The demand for Wire Rods is quiet, but prices are firm, owing to the fact that Rod mills have so much tonnage booked for Wire and Nails that they have very few Rods to spare. We quote Bessemer and Open Hearth Rods at $31, Pittsburgh.

Skelp.—While no large orders are being placed for Skelp, the mills have a good deal of tonnage booked and are firm in their ideas as to prices. We quote Grooved Iron Skelp at 1.40c. to 1.45c.; Sheared Iron Skelp, 1.50c. to 1.52½c., and Grooved and Sheared Steel Skelp at 1.35c., all f.o.b. Pittsburgh.

Steel Rails.—The market is quiet and no large contracts are being placed. It is becoming more evident that the railroads have absolutely decided not to buy any more Rails this year than they are compelled to, and that tonnage this year will fall far short of last year. We quote at $28, at mill, for Standard Sections.

Structural Material.—The Diamond National Bank Building in this city will be erected by James Stewart & Co., the Steel, about 1500 tons, going to Carnegie Steel Company. The Pittsburgh Construction Company secured the contract to-day for repairs to the Point Bridge in this city, in which 685 tons of Structural Steel will be used. Aside from the above no large contracts have been placed in this district. A good deal of work is in sight, but it is slow in developing. It may be said that the labor situation is better than at this time last year, and this ought to encourage building operations. We quote: Beams and Channels, up to 15-inch, 1.60c.; over 15-inch, 1.70c.; Angles, 3 x 2 up to 6 x 6, 1.60c.; Zees, 1.60c.; Tees, 1.60c.; Steel Bars, 1.60c., half extras, at mill; Universal and Sheared Plates, 1.60c.

Plates.—The demand for Plates is only fair, consumers still pursuing the policy of buying only for actual needs, which keeps tonnage down to a minimum. The outlook is that the Plate trade will continue quiet, as the railroads are placing very few orders for Materials, and more especially for Steel cars. We quote: Tank Plate, ¼-inch thick and up to 100 inches in width, 1.60c., at mill, Pittsburgh; Flange and Boiler Steel, 1.70c.; Marine, Ordinary Fire Box, American Boiler Manufacturers', 1.60c., at mill, Pittsburgh; Flange and Boiler Steel, 1.70c.; Locomotive Fire Box, not less than 2.10c., and it ranges in price up to 3c. Plates more than 100 inches in width, 5c. extra per 100 lbs. Plates 3-16 inch in thickness, $2 extra; gauge Nos. 7 and 8, $3 extra; No. 9, $5 extra. These quotations are based on carload lots, with 5c. extra for less than carload lots; terms net cash in 30 days.

Sheets.—We can note a fair demand for Sheets, but there is some unevenness in prices, due to the recent heavy reduction in wages, some of the mills seemingly being disposed to give away a part of this advantage to customers. In view of the high price of Sheet Bars and the trouble that is experienced in getting prompt deliveries, it seems a foolish policy on the part of the Sheet mills to cut prices of Sheets, as it does not increase consumption one pound. Some of the Sheet mills are fairly well filled up to July 1 and are firm in their ideas as to prices. Other mills that are not so well fixed with orders are inclined to shade prices to get them. We quote No. 26 Black Sheets at 2.10c.; No. 27, 2.15c., and No. 28, 2.25c., f.o.b. at mill for carload lots. In some cases these prices are being shaded about $1 a ton, but only by a few mills. Galvanized Sheets are held at 2.85c. for No. 26, 3.04c. for No. 27, and 3.23c. for No. 28. Jobbers charge the usual advances for small lots from store.

Bars.—Tonnage in both Iron and Steel Bars shows a falling off as compared with March, which was a very good month. Specifications on contracts placed some time since are coming in fairly well, but the Bar mills could take care of a good deal larger tonnage if they had it. We quote Iron Bars at 1.35c. to 1.40c., Pittsburgh, and Steel Bars at 1.35c., Pittsburgh, in carload and larger lots, with the usual differentials for less than carloads. On Open Hearth Bars $1 a ton advance is charged.

Hoops and Cotton Ties.—We quote Steel Hoops at 1.40c., Pittsburgh, and Steel Bands at 1.35c., extras as per Steel card. The demand for Hoops and Bands is only fair. The mills have entered a heavy tonnage in Cotton Ties, on which shipments are now going forward. Some of this tonnage was taken at comparatively low prices. At present Cotton Ties are quoted at 80c. per bundle in 3000-bundle lots and over, and 83c. for less quantities. A good deal of tonnage was booked, however, at less than the above prices.

Merchant Pipe.—The backward season, especially in the North, has restricted the demand for Merchant Pipe, but in the smaller sizes used for building purposes demand is quite good. Among contracts recently placed was one for 105 miles of 6-inch Line Pipe, taken by the Wheeling Steel & Iron Company, Wheeling, W. Va. The line is to be built

by the National Oil & Transit Company, to convey oil from Coaling to Monterey Bay, on the Pacific Coast. Pittsburgh basing discounts to consumers in carload lots, which, however, are sometimes shaded, are as follows:

Merchant Pipe.

	Steel.		Iron.	
	Black. Per cent.	Galv. Per cent.	Black. Per cent.	Galv. Per cent.
⅛, ¼ and ⅜ inch....	68	58	66	56
½ inch.....	71	61	69	59
¾ to 6 inches.....	75	65	73	63
7 to 12 inches.....	71	61	68	58
Extra strong, plain ends, ⅛ to 8 inches.....	67	57	64	54
Double extra strong, plain ends, ⅛ to 8 inches	59	49	56	46

Boiler Tubes.—The demand for Boiler Tubes is quiet and there is considerable competition among the mills to secure the business that is being placed, with the result that prices are being shaded more or less. Discounts to consumers in carloads, which are sometimes shaded 5 per cent. or more, are as follows:

Boiler Tubes.

	Steel.	Iron.
1 to 1½ inches.....	42½	39
1¾ to 2¼ inches.....	55½	38
2½ inches.....	58	43
2¾ to 5 inches.....	64½	50½
6 to 13 inches.....	55½	38

Merchant Steel.—We note a moderate demand, but tonnage this month shows a large falling off, as compared with March. The mills report that specifications on contracts are coming in at a very satisfactory rate. We quote: Hexagon Steel Bars, 1.60c. for Bessemer and 1.65c. for Open Hearth; Plow Steel, 6-inch and under, 1.40c. for Bessemer and 1.45c. for Open Hearth; Plow Slabs, ¼-inch and heavier, 1.65c.; Tire Steel, smooth finish, ¾ x 3-16 and larger, 1.65c. flat; Toe Calk, 1.90c.; Carriage Spring Steel, 1.75c. The demand for Shafting is quite heavy, and the mills have more tonnage on their books than for several months. We quote at 52 per cent. off in carloads and 47 per cent. in less than carloads, delivered in base territory.

Tin Plate.—Some trouble over the recent reduction of 18 per cent. in wages of Tin Plate workers has developed and at this writing three or four of the largest mills are idle, the men refusing to work under the reduction. The demand for Tin Plate is heavy and some of the leading mills are considerably behind on shipment. We quote 100-lb. Coke Ternes, $3.40 per box, f.o.b. Pittsburgh.

Spelter.—The market on Spelter is somewhat weaker, and prime Western grades are now being offered at about 5.18½c., Pittsburgh, for spot shipment.

Iron and Steel Scrap.—The market on Old Material is very dull and prices have gone off to some extent, being weaker than for some time. The sale of the Clairton Steel Company, who were the largest individual buyers of Heavy Melting Scrap, to the United States Steel Corporation probably means that this concern may be supplied with Scrap by the Carnegie Company in the future. We quote Heavy Melting Scrap at $13.25 to $13.50, in gross tons, but several consumers claim it has been offered them recently at $13. Malleable Scrap is $11.25 to $11.50 in gross tons; Old Steel Rails, short pieces, $13.25 to $13.50 in gross tons; Rerolling Rails, $15.25 to $15.50, gross tons, and No. 1 Wrought Scrap is about $13 in net tons. Practically nothing is doing in the other grades of Scrap.

Coke.—There is not much demand for Furnace Coke, but Foundry is quite active. There is a plentiful supply of cars, and prices of Coke are easier than for some time. We quote strictly Connellsville Furnace Coke at $1.60 a ton for prompt shipment, but note that some tonnage has been sold recently as low as $1.50 a ton. Connellsville 72-hour Foundry Coke is held at $2 to dealers and $2.15 to consumers, but some brands of Foundry Coke that have an established reputation and which are given the preference by consumers bring $2.25 a ton or higher.

Plans for the erection of the Semet-Solvay coke plant at South Chicago, the property for which was purchased about a year ago, are now in course of preparation and will probably be completed in a month or two. About 193 acres of land were originally purchased, embraced in two tracts, and the project, as mentioned in *The Iron Age* for June 18, 1903, contemplated the construction of 120 ovens.

It is likely that work will be begun on another rapid transit subway in New York before the end of the year, as the Plan and Scope Committee of the Rapid Transit Commission has reported in favor of one which will serve the East Side of the city. The commitee has recommended the preparation of plans and specifications without delay, and the Mayor having signed the two rapid transit bills, nothing stands in the way of immediate development. Should this tunnel be built, it means the consumption of an immense amount of steel.

The American Production Company.

The American Production Company, Reynoldsville, Pa., have made application for a charter, with a capital of $300,000. Charles McSherry is president and general manager; George M. McDonald, secretary, and C. F. Hoffman, treasurer. They will take over the business of Charles McSherry, builder of metal working machinery and tools, removing the equipment in his shops at Pittsburgh to the new plant to be built at Reynoldsville.

The new company have secured 10 acres of ground, on which will be erected three fire proof buildings of steel frame construction, with hollow tile walls, cemented tile roofing, metal window frames and steel doors. The foundry will be 75 x 100 feet, commanded by a 10-ton electric crane. The machine shop will be 75 x 100 feet, commanded by a 10-ton electric crane, and will be equipped with the latest improved machinery for the manufacture of squaring shears, brick machinery and a full line of presses for sheet metal and plate work. Power brakes will also be manufactured. A general shop, 65 x 300 feet, will be erected for turning out ornamental iron work, sheet metal work and electroplating. The motive power will be furnished by gas motors designed by the company. A fire proof building 26 x 40 feet, two stories high, will be erected for general offices, the second floor to be used as a drafting room. The company will build labor saving machinery and manufacture brass, steel and iron castings, ornamental iron and brass work, light structural steel and all kinds of sheet metal work. The buildings will be steam heated and electric light will be furnished by their own lighting plant. Work on the buildings will be pushed as fast as possible, with the hope of doing business in the new shops within 60 or 90 days.

PERSONAL.

Howard M. Hooker of Howard M. Hooker & Co., dealers in pig iron, Farmers' Bank Building, Pittsburgh, has been elected a member of the Pittsburgh Stock Exchange.

Arthur J. West has resigned his position as assistant chief engineer of the Allis-Chalmers Company, Milwaukee, Wis., with which company he has been connected in various capacities for the past ten years. After May 1 he will probably identify himself with one of the companies in the East engaged in the same line of business.

Ervin Dryer has resigned his position, after a service of over 16 years, in connection with the Westinghouse Electric & Mfg. Company, and has accepted an appointment as salesman with the Allis-Chalmers Company. He has already entered upon his new duties, and his headquarters will be at the main offices in the New York Life Building, Chicago. He will give his attention to engine work as well as to the sale of Bullock electrical apparatus, which the Allis-Chalmers Company now control through their acquisition of the Bullock Electrical Mfg. Company, Cincinnati.

David J. Havenstrite, one of the pioneers in the industry of ice making and refrigeration, and until recently head of the Havenstrite Engineering Company, has joined the staff of the Engineering Company of America, 74 Broadway, New York, and will continue to devote his attention to his specialty.

W. W. Stephens, president of the Stephens-Adamson Mfg. Company, Aurora, Ill., will return this week from a six weeks' business and pleasure tour on the Pacific Coast.

G. M. Richmond has been elected vice-president of the American Emery Wheel Works, Providence, R. I., and H. A. Richmond has been appointed superintendent of works in place of W. D. Allen.

A. E. Knoff will succeed O. D. Colvin on May 1 as sales manager of the American Steel & Wire Company at Seattle, Wash.

Fr. Froelich, a member of the editorial staff of the Journal of the Institution of German Engineers at Berlin, is among the recent arrivals. He is one of the commissioners to the St. Louis Exposition and will spend about

a year in this country studying American rolling mill and mining machinery.

Metal Market.

NEW YORK, April 27, 1904.

Pig Tin.—The market during the week has been very quiet, transactions continuing on a light scale, and an easier tone prevailing both here and in London. Consumers seem to be stocked up with sufficient metal to meet present and early future needs, and buying is confined almost entirely to comparatively small lots called for by immediate consumptive requirements. Stocks seem to be quite adequate to meet current demand, and the increased supplies in sight are taken as precluding any likelihood of permanent high prices. The market for the time being is in buyers' favor and was easy at the close to-day, spot, April and May being quoted at 27⅞c. to 28⅛c. The London market rules a shade higher, standing at £127 12s. 6d. for spot, with futures unchanged at £126 15s. The arrivals of Tin thus far this month have amounted to 3890 tons, and the afloats are figured at 2474 tons.

Copper.—While it is said that some good sized orders have been placed for Electrolytic and Casting Copper by Wire and Brass makers in the past week or ten days, the market generally has retained its condition of dullness. Holders are maintaining prices very firmly, however, and Lake Copper has stiffened about ⅛c. during the week. Official figures now quoted are as follows: Lake, 13⅜c. to 13⅝c.; Electrolytic, 13⅛c. to 13¼c.; Casting, 12⅞c. to 13⅛c. The London market has advanced, and quoted to-day at £58 7s. 6d. for spot and £58 5s. for futures. Best Selected is unchanged at £62 15s. The exports so far this month have amounted to 11,600 tons, still showing a considerable falling off from recent months.

Pig Lead.—With but a very moderate demand and more liberal shipments from the West, the market has eased off slightly during the past week. Spot, however, still commands a premium, and is quoted here, from store, at 4.60c. to 4.65c. The American Smelting & Refining Company quote on a basis of 4.50c. for 50-ton lots of Desilverized, shipment within 30 days. Shipments can be had for 4.50c. to 4.55c. St. Louis is easy at 4.40c. London cables to-day quote £12 2s. 6d.

Spelter.—Freer offering from smelters and tame buying have conspired to soften the market, which has been quiet and easy throughout the week. Spot stocks, however, are still rather light, which serves to prevent any marked decline in prices. Spot and April shipments are quoted at 5.20c. to 5.25c. St. Louis telegraphs 5.05c. to 5.10c., and London cables £22 7s. 6d.

Antimony.—A light demand is noted, but the market is firm and unchanged. At the close to-day Cookson's was quoted at 7¾c. to 8c., Hallett's at 7¼c. to 7½c. and other brands at 6¼c. to 6½c.

Nickel.—The usual amount of business is passing and prices are firm, large lots being quoted at 40c. to 45c. and smaller quantities at 50c. to 60c.

Quicksilver.—The market is quiet, with ample stocks and a demand of moderate proportions. Quotations here are lower at $45 for flasks of 76½ lbs. The London price is down 2 shillings 6 pence, being quoted to-day at £8 2s. 6d.

Tin Plate.—Contract shipments from the mills are heavy and a fair tonnage of new business is being placed. Local jobbing houses report some increase in the demand with the coming of milder weather. Quotations are very firm, on the basis of $3.45 per box for 14 x 20, 100-lb. Cokes, f.o.b. mill, equivalent to $3.64, New York.

New York.

NEW YORK, April 27, 1904.

Pig Iron.—Although individual sales are small, quite a fair tonnage is rolling in from day to day. There have been some inquiries for round lots for more extended delivery, but in nearly every instance the final outcome has been that the founder has taken only moderate quantities for early delivery. We continue to quote: Northern No. 1 Foundry, $15.50 to $16; No. 2 Foundry, $15 to $15.50; No. 2 Plain, $14.50 to $14.75, and Gray Forge, $13.75 to $14.25, tidewater. Tennessee and Alabama brands are quoted $13.75 to $14 for No. 2 Foundry and $13.25 to $13.50 for No. 3 Foundry.

Steel Rails.—There have been some moderate sales for export lately, among them being one lot for Australia and another for Siam.

Cast Iron Pipe.—Bids are being taken by purchasing agents in this city on some 2000 tons for California. Cincinnati is also in the market for about 15,000 tons. This city will purchase 200 tons this week. The trade is looking with great interest for the specifications on the high pressure salt water system for this city, which will probably be out shortly. The Eastern foundries are getting very well filled with work, owing to the continuous run of small orders, and an excellent season seems assured. Prices are firm, carload lots still being quoted at $28 per gross ton for 6 to 10 inch and $27 for 12-inch upward, at tidewater. Special prices are made on large lots.

Finished Iron and Steel.—The Pencoyd Works of the American Bridge Company were started on Monday, turning out structural shapes. The immediate orders on which these works were started cover about 7000 tons for bridge work for Japan taken some six months since. The bridges are small, about 100 spans being required. The Erie Railroad Company are receiving bids on 2000 tons of bridge work. Some grade crossing work is likely to come out in a short time in Chicago. The building trade is not showing much activity in this locality, as contractors are awaiting developments in labor matters on May 1. It is most earnestly hoped that the apprehension of further labor troubles will prove to be groundless. The Plate trade is decidedly quiet. Orders are confined to small quantities, the largest business reported during the week having been under 200 tons. The general Bar Iron situation continues quite satisfactory, the mills being in receipt of good orders and the pressure for prompt shipment continuing. The local Bar Iron trade is now threatened with some adverse conditions, as a lockout in the wagon shops is anticipated next Monday. This will considerably curtail the consumption of Bar Iron locally. We quote, at tidewater, as follows: Beams, Channels, Angles and Zees, 1.74½c. to 2c.; Tees, 1.79½c. to 2c.; Bulb Angles and Deck Beams, 1.84½c. to 2.05c. Sheared Plates in carload lots are 1.74½c. to 1.85c. for Tank, 1.84½c. to 2c. for Flange, 1.94½c. to 2.10c. for Marine and 1.94½c. to 2.50c. for Fire Box, according to specifications. Refined Bar Iron and Soft Steel Bars, 1.49½c.

Old Material.—The market is weaker. Consumers appear to have covered their immediate requirements, and offers of material are met by counter offers at prices considerably under those which sellers are willing to accept. Prices are quoted as follows per gross ton, New York and vicinity:

Old Iron Rails	$17.00 to $17.50
Old Steel Rails, long lengths	13.50 to 14.00
Old Steel Rails, short pieces	12.00 to 12.50
Relaying Rails	18.00 to 19.00
Old Car Wheels	11.50 to 12.00
Old Iron Car Axles	16.50 to 17.00
Old Steel Car Axles	14.50 to 15.00
Heavy Melting Steel Scrap	12.00 to 12.50
No. 1 Railroad Wrought Iron	15.00 to 15.50
Iron Track Scrap	14.00 to 14.50
Wrought Pipe	11.00 to 11.50
Ordinary Light Iron	8.00 to 8.50
Cast Borings	5.00 to 5.50
Wrought Turnings	7.50 to 8.00
No. 1 Machinery Cast	11.50 to 12.00
Stove Plate	9.50 to 10.00

The offices of the Warren Foundry & Machine Company, manufacturers of Cast Iron Pipe, are now located in Rooms 701 to 705 at 170 Broadway, New York.

The New York sales office of the Tennessee Coal, Iron & Railroad Company will be closed on April 30. Frank A. Burr, general sales agent, will make his headquarters at Birmingham, Ala.

Iron and Industrial Stocks.

The chief feature of the week was the alternate weakness and strength in the United States Steel stocks. On Wednesday afternoon, April 20, a heavy selling movement developed in Steel preferred which carried the price under 56, the weakness in this stock affecting other iron and steel stocks, as well as securities of railway equipment companies. On Thursday the market developed a much firmer tone, and from that time prices were steady until Monday of this week, when Steel preferred and Republic preferred again displayed extreme weakness. On Tuesday the market changed its character and stocks strengthened. By some the peculiar action of Steel preferred was attributed to the closing of the operations of the bond conversion syndicate. The chief fluctuations of the week were as follows: Allis-Chalmers preferred, 40 to 43; Can preferred, 33¾ to 35⅛; Car & Foundry preferred, 70 to 72; Locomotive common, 18½ to 20¼; Colorado Fuel, 31 to 32¼; Crucible Steel preferred, 35 to 37½; Pressed Steel common, 24½ to 26; Railway Spring preferred, 72¾ to 74½; Republic preferred, 41¼ to 45; Steel preferred, 55½ to 57⅝; new 5 per cent. Steel bonds, 76¾ to 78¼. Last prices on active stocks up to 1.30 on Wednesday were as follows: Car & Foundry common 17⅝, preferred 70; Locomotive common 18⅝, preferred 80; Colorado Fuel, 32¼; Pressed Steel common 25⅝, preferred 70½; Railway Spring common 19, preferred 74½; Republic common 6¾, preferred 42¼; Sloss-Sheffield common 39½, preferred 84; Tennessee Coal, 37; United States Steel common 10⅝, preferred 56⅜, new 5 per cent. bonds 76⅞.

The heavy transactions in United States Steel sinking fund 5 per cent. bonds during the last two weeks were followed on Monday by the report that the bond syndicate, of which J. P. Morgan & Co. are managers, would be dis-

solved within the next few days, as the operations of the syndicate had been practically wound up, and only $1,000,000 in bonds remained to be sold. On March 1 the syndicate owed the Steel Corporation the sum of $9,000,000 on the total cash payment of $20,000,000 which the syndicate was to provide under the conversion plan. On the same day there remained to be delivered to the syndicate the amount of $12,000,000 in bonds.

Dividends.—The Star Enameling & Stamping Company, Allegheny, Pa., have declared the quarterly dividend of 3 per cent., payable forthwith.

United States Cast Iron Pipe & Foundry Company have declared a quarterly dividend of 1 per cent. on the preferred stock, payable June 1. Books close May 11.

Trade Publications.

Electric Haulage.—Bulletins Nos. 6 and 7 from the Jeffrey Mfg. Company, Columbus, Ohio, have as subjects "Electric Haulage *Versus* Mule Haulage" and "An Alabama Electric Coal Haulage Plant." The first gives interesting facts concerning the use of electric locomotives in mines, and among other interesting things states that one 20-ton locomotive replaced 21 mules and 7 drivers. The expenses all through are compared carefully with a view to pointing out the greater economy of the electric system. The second bulletin is a detailed description of a single installation. It contains very valuable data for those interested in the subject.

Metal Working Machines and Tools.—The 1904 catalogue of the Niagara Machine & Tool Works, Jefferson, Superior and Randolph streets, Buffalo, N. Y., describes a line of tinsmiths' tools, machines, shears, punches, rollers, &c., and, in short, all the apparatus required by sheet metal workers. This includes a number of folders and edging machines of various types for both hand and power manipulation; burring, wiring and beading machines; crimping and flanging machines; swedges; groovers; forming and bending rollers; seamers; all kinds of hand tools; shears; soldering irons; punches, &c.; foot power shears and foot, hand and belt power presses and punches.

Plate Metal Construction.—The Coatesville Boiler Works, Coatesville, Pa., are distributing a neat little catalogue with the foregoing title. It is largely given over to illustrations showing samples of the work, these including boiler fronts, self supporting steel stacks, stand pipes, boilers, garbage digesters, &c. As useful information it contains tables of standard dimensions for internal fired corrugated boilers, return tubular boiler details and standard dimensions, capacity of stacks, standard vertical boilers and heating boilers.

Metal Expanding Tools and Machinery.—Catalogue of the Lovekin tools for expanding and flanging iron, steel and copper piping has been received from the Scully Steel & Iron Company, Halsted and Fulton streets, Chicago, Ill., who are exclusive agents for the tools. Illustrations of the several machines and special detail tools, &c., are given, accompanied with descriptions of their construction and operation. Sectional line drawings are included showing the work which they perform. The machines are capable of expanding and flanging piping from the smallest size boiler tubing to the largest lap welded piping made, and of expanding valve seats in gate, globe and angle valves. Luther D. Lovekin is the inventor and patentee of the apparatus described. An accompanying circular shows the dial self feeding tube cutter sold by the Scully company and the manner of using it in cutting off boiler tubes either inside or outside of the head.

Foundry Supplies.—General Catalogue No. 40, from the S. Obermayer Company of Cincinnati, Chicago and Pittsburgh, is a cloth bound book of 370 pages. The book is decidedly comprehensive, covering, as it professes to do, everything needed in the foundry, from facings and sand to cupolas, including all sorts of hand accessories and power shakers, mixers, blowers, ladles, tumblers, molding machines, dryers, conveying apparatus, grinders, &c.

NOTES.

The N. & G. Taylor Company, Philadelphia, Pa., have issued a little book entitled "Rufus the Roofer," which while especially appealing to the humorous sense incidentally advertises the Taylor Old-Style tin.

The Firth-Sterling Steel Company, 53 North Desplaines street, Chicago, Ill., E. S. Jackman, agent, are distributing a folder of pigeon hole size announcing a special sale of water hardening grades of Firth-Sterling tool steel to make room for a stock of air hardening high speed steel, Blue Chip brand, and giving a tabulated list of sizes and grades, with the available quantity to be had.

The Chicago Pneumatic Tool Company, Fisher Building, Chicago, Ill., with the month of April began the publication of "Something Pneumatic," a monthly magazine devoted to the interests of pneumatic appliances and their motive power. The leading articles of this first issue are "The Redfield Pneumatic Saw," "A New Design of Air Compressor," and "A Pneumatic Hammer." The type and illustrations are admirable.

The Abendroth-Root Mfg. Company, Newburgh, N. Y., have issued three circulars; one on the subject of the Root sectional water tube boiler, showing some improved designs; another calling attention to the lines of manufacture, which in addition to boilers include spiral riveted pipe, exhaust heads, spiral and straight riveted bilge pumps, straight seam pipe, tanks, stacks and plate work, high speed engines, &c., and a third treating of spiral riveted pipe, exhaust heads and bilge pumps.

Fairbanks, Morse & Co., Chicago, Ill., are distributing three circulars. One shows the semi-inclosed type E electric motor and dynamo for direct current. Another shows a portable oil engine outfit designated as "Jack-of-all Trades," which is shown in operation driving a pump, grinder and wood saw. The third shows more comprehensively gas, gasoline and distillate crude oil and kerosene engines used for pumping, hoisting and miscellaneous power applications and also one of marine form.

The Hanna Engineering Works, 820 Elston avenue, Chicago, Ill., have issued a circular showing the Hanna portable screen shaker in its many forms for sifting sand by air or steam power. This is adapted to be secured on walls or posts in the foundry or is self supporting by means of weighted tripods.

The Burt Mfg. Company, Akron, Ohio, have gotten out an interesting picture showing a 30-inch exhaust head they recently made for the Jones & Laughlin Steel Company, Pittsburgh. This exhaust head is 10 feet high, 9 feet 4 inches in diameter and weighs 2700 pounds.

Eaton & Prince Company, Chicago, have issued a 32-page pamphlet, entitled "Our Reference Book," in which they reproduce 42 autograph letters from users of their freight and passenger elevators, and print the names of several hundred firms throughout the country who are using their product. The book is artistically bound in illuminated vellum, tied with silk cord.

Central American Notes.

SAN JOSÉ, C. A., April 15, 1904.—Absolute quiet has reigned throughout the republics of Central America for quite a while. Confidence in the situation is shown by American and European capital now being invested in these countries. Nicaragua has new lines of steamers as well as a projected railway from Mosquitin to the lakes. Cotton is being planted extensively in the low regions, and considerable has already been exported through the ports of Comito and San Juan del Sur. It is of superior quality. Honduras is extending its roads northward and westward. Mining capitalists like Don Santos Soto have invested extensively in the gold, silver and copper regions. Several American concerns are investigating the Agalta iron deposits, and it is pretty sure that as soon as a road can be cut through the forest to the Atlantic active work will begin at these famous mines. All this will have a most beneficial effect on the import trade and general business here, to say nothing of the probable boom in building of all sorts, railroad and bridge making inclusive. As often happens, the rainy season carried away a number of bridges over the Motagua, Grande and other rivers, and it seems to be the policy of these Governments now to replace them with steel structures.

It is generally understood that the Keith syndicate will buy up the old Northern Railway of Guatemala and push the line through from the Atlantic to the Pacific. This will entail the rebuilding from Puerto Barrios to Zacapa of the main line, the railway having been practically abandoned since work was stopped at San Augustin. For several hundred miles the iron rails will have to be entirely replaced, as iron rusts very rapidly in this climate. Much of value could be learned by the Panama Commission in this region.

The State of Chiapas, Mexico, one of the richest in this region, is soon to be in communication wtih the outside world by means of the line of railroad which is nearing San Benito. Gold, copper and iron mines in this section are practically at a standstill awaiting the railway. The agricultural section is also very rich, especially in coffee and chocolate beans, and it is certain that the opening up of San Benito port will start an active and valuable import and export trade in this new country.

The earthquake at the port of Manzanillo practically ruined the breakwater and steel piers, to say nothing of the damage done to the dredging works. The Mexican Government is asking for bids on these repairs, which will run into the millions. Very little of the work, which has gone on actively for five years, is standing or in good repair. The railway line from Colima to the Pacific also suffered, many of the rails being twisted out of shape. Another six months' work will be required to put things to rights. C.

The New York Machinery Market.

NEW YORK, April 27, 1904.

The most important development of the week, and the only one of large magnitude reported in the machine tool trade, was the purchase of 45 turret lathes and other machinery amounting to upward of $100,000 by the Japanese Government for making projectiles. This order was placed in Germany through Takata & Co., one of the prominent Japanese-American export houses. While manufacturers in this country are not directly benefited by this order, its importance to the machine tool trade lies in the fact that it marks the beginning of extensive purchases of mechanical equipment to be made by the Japanese Government. As was noted in these columns two weeks ago, provision has been made for buying approximately $500,000 worth of machinery. We are now informed on good authority that specifications for part of this amount will shortly be sent to the trade for bids. Though it is not surprising that the orders for the projectile lathes were placed in Germany, where prices are ridiculously low as compared with those prevailing here, some annoyance is felt over the fact that more consideration was not shown manufacturers in this country, whose tools are unquestionably superior in many respects to those made abroad. Of the remaining lot of machinery to be purchased it is hoped a goodly portion will be captured by American concerns.

It seems certain, from the present condition of the machine shop equipment of the various railroads, that they must come into the market in the near future for a large amount of new machinery. Owing to the greatly increased traffic, the railroad systems throughout the country have, during the past year, added very extensively to their rolling stock, but they have not increased their machine shop facilities proportionately. To properly care for this increase of rolling stock it will be necessary for the roads to make large purchases of machinery, and as many of them have plans now under way for new shops, it is probable that this year will prove a good one to machine tool builders who make a specialty of railroad business.

One of the large projects which is expected to bring forth very large orders this summer is the extensive new wheel foundry and machine shop of the Pennsylvania Railroad Company now nearing completion at South Altoona, Pa. We are officially informed that the foundry is to be electrically operated and that orders have been placed for two 300-kw. generators direct connected to two Wetherill-Corliss cross compound engines. Aside from the power equipment we understand that no machinery has been purchased for equipping this plant, which will be the principal one of the company, and which when completed will be the largest car wheel works in the country. There will be in the group several buildings of large proportions, the main structure, the foundry, being 226 x 602 feet. It is estimated that the plant will cost considerably over $1,000,000.

Matters pertaining to power plant equipment are receiving their share of attention in the street, where it is reported on good authority that the Public Service Corporation of New Jersey have placed orders for the initial installation of their new power station on the outskirts of Jersey City. This equipment is of about 10,000 kw. capacity, and is to include Babcock & Wilcox boilers and Curtis turbines.

Bids are being received for the equipment for the large new electric power plant of the Long Island Railroad now in course of erection at Long Island City. The specifications were drawn up some time ago by Westinghouse, Church, Kerr & Co., New York, who are the engineers in charge of the work. The equipment, for which the company are receiving bids, is to be used for operating the Long Island Railroad from Jamaica to Long Island City. Eventually this station is to be enlarged to operate the East River tunnel section of the Pennsylvania Railroad, and will be one of the largest power plants in the country when completed.

The Thompson-Starrett Company, 49 Wall street, New York, who have the contract for the engines, generators and electric equipment of the great new department store which is being constructed in New York by John Wanamaker, have purchased the engines from the Buckeye Engine Company, Salem, Ohio, and the generators from the Westinghouse Electric & Mfg. Company, Pittsburgh. There were six 300-kw. generating sets in all, which will be served by 2400 horse-power of Babcock & Wilcox boilers.

So far the only contract let for the new Wanamaker store to be erected in Philadelphia was for the boilers. These will be furnished by the Babcock & Wilcox Company, New York, and will be of 5300 horse-power.

The Remington Arms Company, New York, are placing orders for about $6000 worth of machinery to replace worn-out tools in their factory at Ilion, N. Y.

The Babcock & Wilcox Company, New York, have increased their capital stock from $1,500,000 to $3,000,000. The company's business has increased very largely within the past year or two, and only lately they completed a new foundry at their shops at Bayonne, N. J. They have lately received orders from the Birmingham Railway, Light & Power Company, Birmingham, Ala., for 4500 horse-power of boilers, and the San Francisco Gas & Electric Company, San Francisco, Cal., 3500 horse-power.

Considerable new machinery will probably be required by the Victor Talking Machine Company, Camden, N. J., to replace that lost in the recent fire which destroyed their plant. The company had a very large plant and were lately planning extensive additions. A large quantity of stock and machinery is said to be destroyed, and the loss is estimated at $500,000.

Announcement is made of the entrance into the steam turbine field of the Hooven, Owens & Rentschler Company, Hamilton, Ohio, who have completed and successfully tested the first of their new steam turbines. The turbine is of 1000 kw. capacity, direct connected to a 1000-kw. Bulloch electric generator, and is intended for exhibition at the St. Louis World's Fair.

The following bids were opened April 19 for electric equipment for the United States Navy, consisting of motors, controllers, &c.:

General Electric Company, Schenectady, N. Y., $85,888.

Crocker-Wheeler Company, Ampere, N. J., $96,352.

Thresher Electric Company, Dayton, Ohio, $92,400; also $87,600 on modified specifications.

Holtzer-Cabot Electric Company, Brookline, Mass., $112,938.

Proposals were opened at the Bureau of Yards and Docks, Navy Department, Washington, on April 9, for coal handling machinery at the Boston Navy Yard, as follows:

Robbins Conveying Belt Company, New York, $8000; time, 10 weeks; $7715 conditional.

Link-Belt Engineering Company, Nicetown, Philadelphia, Pa., $11,530; time, 15 weeks; $235 add conditionally.

John A. Mead & Co., New York, $9752; time, three months.

Exeter Machine Works, Pittston, Pa., $7300; $7000 alternate.

The Jeffrey Mfg. Company, Columbus, Ohio, $12,750.

Steel Cable Engineering Company, Boston, Mass., $10,723; time, four months.

Bids were opened April 5 for supplies for the navy yards, as follows:

Portsmouth, Boston and Newport.

Bidder 73. Marshall I. Davidson, Brooklyn, N. Y.
97. Geo. F. Blake Mfg. Company, New York.
101. Warren Steam Pump Company, Warren, Mass.
120. Harold I. Bond Company, Boston, Mass.
124. Drew Machinery Agency, Manchester, N. H.

Class 60. Boiler feed pumps—Bidder 73, $1175; 97, $1290; 101, $1361; 124, $1410; 120, $1930.

Puget Sound and Mare Island.

Bidder 11. Manhattan Supply Company, New York.
14. Manning, Maxwell & Moore, New York.
23. Tatum & Bowen, San Francisco, Cal.
26. John B. Roache, Brooklyn, N. Y.
31. General Electric Company, Schenectady, N. Y.
52. Baker & Hamilton, San Francisco, Cal.
56. J. B. Kendall, Washington, D. C.
57. Westinghouse Electric & Mfg. Company, Pittsburgh, Pa.
79. Dunham, Carrigan & Hayden, San Francisco, Cal.
92. Western Electric Company, New York.
93. Montgomery & Co., New York.
97. Fox Bros. & Co., New York.
120. Drew Machinery Agency, Manchester, N. H.

Class 3. One Motor generator set—Bidder 31, $1758 and $1770; 57, $1865; 92, $2241.

Class 19. Four horizontal claw hydraulic jacks—Bidder 56, $363; 97, $363; 120, $369; 52, $400; 79, $403.04; 93, $404; 26, $408; 14, $416; 23, $423.20; 11, $458.

The following are the bids opened by the lighthouse engineer at Mobile, Ala., for two air compressors for the Sabine Bank, Texas, light station:

Rand Drill Company, St. Louis, Mo., $2310, accepted, also $3150.

N. A. Christensen, Milwaukee, $2400.

A. M. Lockett & Co., New Orleans, $2858.

Ingersoll-Sergeant Drill Company, Birmingham, Ala., $3938 and $3800.

Bids were opened January 28 by the engineer of the eleventh lighthouse district for furnishing two 6-ton pillar cranes for use at the Spectacle Reef, Mich., light station, as follows:

Contractors Plant Mfg. Company, Buffalo, N. Y., $1000.

Dobbie Foundry & Machine Company, Niagara Falls, N. Y., $1400.

Northern Engineering Works, Detroit, Mich., $1530, accepted.

Russell Wheel & Foundry Company, Detroit, Mich., $1600.

Industrial Works, Bay City, Mich., $1948.

Whiting Foundry Equipment Company, Harvey, Ill., $2000.

Brown Hoisting Machinery Company, Cleveland, Ohio, $2050.

Pawling & Harnischfeger, Milwaukee, $2500.
Garry Iron & Steel Company, Cleveland, Ohio, $2690.

The Drew Machinery Agency, Manchester, N. H., have issued a new stock list covering a large quantity of boilers, engines, machine tools, wood working machinery, &c.

Cincinnati Machinery Market.

CINCINNATI, OHIO, April 25, 1904.

A review of the machine tool industry of this city shows conditions practically unchanged. Trade is only fairly active. The month of March in quite a number of instances was far in advance as to output of any equal period for some time, and April bids fair to come in as a close second. Most shops show spasmodic activity, and now and then spurt a little until the energy is expended, and then resume their wonted condition.

As near as can be estimated, the output of the several shops is from 60 to 75 per cent. of their capacity, and, generally speaking, manufacturers as a whole are fairly well satisfied if this shall continue so. When the unusual prosperity of a year or two ago struck the country the question uppermost in the minds of the manufacturers was how to increase facilities for turning out tools rapidly enough to meet the demands of the times. The question now is what can be done to utilize all the machinery and equipment installed in their commodious plants. As one prominent manufacturer remarked, there is no lack of demand for tools, but people would rather lose an order or two than take chances on making any new purchases. This, he thinks, is attributable more than anything else to the stock market flurry of last fall, the people having correspondingly lost faith in investments generally.

It is anticipated that a quiet year is ahead in all lines. Possibly up to July trade may hold as it is at present, but after that period uncertainty and a disposition to delay purchases will obtain and continue until after the November election.

The only bright setting to the picture is the fact that as domestic trade has decreased foreign inquiry and orders have increased to a great extent, and while this is not to say that it has taken the place of home consumption, nevertheless it cuts quite a figure in the matter of production, and is welcomed by manufacturers as very acceptable. There have been some contracts secured in the Orient, a few of them probably as a result of the war now in progress, and further trade is expected when a settlement of the trouble is reached.

Engine builders as a class have not been dealt with as kindly as machine tool men, and as they were among the first to experience the boom they are also first to feel the reverse conditions of trade, and at present have very little business in sight.

Some few months since, the readers of *The Iron Age* will remember, mention was made of a new industry that the Industrial Bureau were endeavoring to have locate in this city. At that time it was thought that the Cal. Hirsch Iron & Steel Company of St. Louis would abandon their plant at that point and remove eastward, locating near Cincinnati. This plan has now taken definite shape, and the conditions which then existed have changed materially. The St. Louis plant will remain as heretofore, and a new concern, known as the I. C. Hirsch Iron, Steel & Rail Company, will take up permanent residence here. I. C. Hirsch, who was formerly vice-president, treasurer and general manager of the St. Louis plant, is principally interested. Associated with Mr. Hirsch is W. B. Kahn, his father-in-law, formerly president of the Atlas National Bank, and a director of the German National Bank, a retired millionaire and large real estate owner. The plant will cover 12 acres near Ivorydale, Ohio, and will consist of a foundry building, 110 x 320 feet; machine shops, 200 x 350 feet; locomotive and car repairing shops, 400 x 500 feet; a large storage warehouse and private railroad switch yards. The balance of the tract will be utilized for storage of rails, iron and steel of every kind, railroad spikes and supplies. Plans and specifications for the plant are about completed. Mr. Hirsch has secured a suite of rooms in the new First National Bank Building, especially arranged and reconstructed for use as offices. The company already have enough business booked ahead to justify the securing of quite a large office force, and will expand as necessity demands. There is nothing in the iron and steel line which they will not carry in stock, make or contract for, after they find a demand for it. They will have branches in Chicago, Pittsburgh, New York, San Francisco, Denver, Kansas City and New Orleans. They are also interested in a waste manufactory, which will allow them to meet competition in this line. They expect to do all their business without the aid of traveling men.

The Osterlein Machine Tool Company report a fair trade and more inquiry prevailing than for some months past. Foreign trade is better, and the outlook is brighter from this source than has been in evidence of late.

The Lodge & Shipley Machine Tool Company note an increase in trade and a general revival of inquiry. They say the month of March was the best for many months, and April is holding its own. Inquiry seems to be more general, and, while they do not anticipate anything startling, they hope to maintain what advantage they have gained, and that the year, taken as a whole, may be satisfactory.

The John Steptoe Shaper Company are still in a class of their own. They are running 63 hours per week and with an increased force. Foreign trade with Norway, Sweden, Denmark and Japan is quite good. They recently shipped to Osaka, Japan, a full line of their tools on Government contract.

Schumacher & Boye remain quiet, with spasmodic fluctuations appearing now and then. They feel that they are securing their portion of trade offering, and hope for better times later in the season.

Smith & Mills are moving along in an even manner, with a ripple now and then that causes them to hurry for the time being, but that gradually subsides until all is serene once more. Foreign trade is fairly active, and some estimating is being done for domestic consumption that they feel will be productive of good results.

The Rahn-Mayer-Carpenter Company feel more encouraged with the outlook than they did a month since. They are shipping several carloads of tools for domestic districts, and are working on a 32 inch by 34 foot lathe for the Orient, which, by the way, will be the largest tool they have ever built.

The Cincinnati Milling Machine Company report that the demand for their machines continues good and that trade shows a steady growth. March they consider as the best month for a long period, and the figures show that April will be equally as good. Trade across the water is falling into line, and the tone of conditions is much better at present.

The output of the Dreses Machine Tool Company is about 60 per cent. of their capacity. The month just closed was better than any four preceding ones, and April compares very favorably with it. Export trade to European countries in general continues to be an important factor of their sales, and they feel that it is gradually increasing.

The Cincinnati Planer Company report a seeming lack of confidence in purchasers, feeling that many of them are unwilling to invest their money in new tools until conditions are changed. Trade, however, compares favorably with the last month, and they are no doubt doing their share. Foreign inquiry continues to show some real life, and this, in a measure, compensates for the absence of domestic activity.

The Cincinnati Machine Tool Company are delighted with the manner in which their new building is progressing. The roof is now being put on, and they confidently expect to be able to occupy the building by June 1. Trade is quiet, both foreign and domestic, and there is very little out of the ordinary transpiring.

"The month preceding was the best we have had since last August," is the report of the R. K. Le Blond Machine Tool Company. Germany, England, Switzerland, Holland and Belgium are making themselves heard, and the company feel very much gratified with the foreign outlook. The domestic inquiry is also better than it was, but will still admit of great improvement.

The I. & E. Greenwald Company, makers of engines and gears, report quite a letting down in the volume of business transacted. This is particularly true of their engine department, while the demand for gears continues exceptionally good. They are forwarding one of their 300 horse-power engines to a point in Texas, and have recently installed a 200 horse-power engine in the new plant of the John Van Range Company of this city. They are working on orders booked previously, but new ones are not coming in as rapidly as they could wish.

The American Tool Works Company say they are quite well pleased with the last two months' business. They are running their plant full time and adding men almost daily. Foreign inquiries have a healthy tone, and a fair number of orders are being received. The demand seems to be for motor driven machinery almost entirely, and they are expending their energy in bringing out this class of tools. They will have on exhibition at the St. Louis World's Fair several of their latest and best types of motor driven lathes.

The Stewart Company Steel & Iron Works, manufacturers of structural, architectural and ornamental iron, located at Third and Eggleston avenues, have greatly added to the appearance of their plant by the addition of several coats of paint. They say that while not so busy as they were some time ago, they are well satisfied with the existing state of affairs, and feel that in their line there is certain to be very material improvement. They are just finishing several large buildings in this city and also in the South, where quite a field is developing.

HARDWARE.

IN another column we print a letter in which our correspondent touches in a direct and forcible manner on the inequities, so far as the interests of the retail Hardware merchants are concerned, in the existing arrangement between the manufacturers of Builders' Hardware. The special point made is, that while these manufacturers are able to agree among themselves as to prices they do not protect the retail merchant, inasmuch as contractors are often able to purchase the goods from the manufacturers at at least as low prices as are the merchants. Whatever may be said in regard to our correspondent's views of the situation, the letter brings up for the attention of the trade at large the perplexities and difficulties which surround the marketing of this important line, in which retail merchants, even those most enterprising and best equipped, find serious and perhaps, on the whole, increasing difficulties in doing a satisfactory business. Under the present methods of direct contact between the manufacturers and the builders or contractors, the interests both of the wholesale and the retail merchants are sacrificed. While this may be owing, to some extent, to the peculiar and necessary difficulties connected with the sale of this complicated line, and perhaps nearly as much to the lack of careful and enterprising attention on the part of the merchants, there is a widespread feeling among the trade that the interests of the merchants, and especially of the retail merchants, are not adequately regarded by the manufacturers. The existing system is certainly troublesome and unsatisfactory to all concerned, except to the contractors, who appear to have no ground for complaint.

Every manufacturer knows only too well the tendency toward narrow margins of profits which has prevailed for years, not only in Hardware, but in practically every line of production. The same principle is gradually forcing itself on the attention of merchants, who find that competition and the changing methods which are entering trade make it necessary to bring their selling prices nearer and nearer to the cost of the goods. Broad profits, which were formerly regarded as reasonable, and were, in fact, easily obtained, are now in most lines entirely out of reach. Fancy profits realized by wholesale merchants half a century ago would appear almost fabulous to their successors of to-day. In the retail store the percentage of profit is also greatly reduced, and many lines are sold on margins so narrow that when the fixed charges of the establishment are taken into account they are handled at a loss. This condition of things results from the natural development of competition, as the field is crowded with those who are seeking to secure whatever business is within reach. In connection with this normal growth of competition, which is, after all, doing a beneficent work as unreasonable prices are being subdued, there is no doubt that changing usages in trade and the opening of new channels of distribution have materially helped the tendency. Five and 10 cent stores, the offering of bargains not only by department stores, but by other merchants, the announcing of low prices on certain goods by catalogue houses, the near approach of manufacturers and jobbers to the larger consumers, have all conspired, with other influences, to lower the percentage of profit on commodities generally. Many of the evils of which merchants complain relate directly to these unsatisfactory margins, and many attempts, frequently futile, are made to broaden them.

The tendency is unquestionably toward close selling prices and the wise merchant recognizes this fact not merely theoretically, but in a practical way. Very frequently profits are sacrificed without reason, and cut prices made for which there is no necessity; the spirit of reckless competition, in which slashing of prices is the dominant feature, often characterizes business. Some merchants need to mend their ways so far as such practices are concerned. There is, however, a more general need of a change of attitude in accepting in a reasonable and practical manner the narrow, and perhaps narrowing, margins which existing conditions are making. The adherence to high prices, prices in some cases inexcusably high, is giving the department store and the catalogue house the opportunities of which they make such efficient use. Where the local merchant is asking an unreasonable profit on any line of goods, or on any article, he is opening the door for new competition to enter, and he is hastening encroachment on his trade by competitors in his immediate vicinity or at a distance, as the case may be, whose disturbance of existing conditions he thus simultaneously deplores and encourages.

Condition of Trade.

A general characterization of business as active, sluggish or quiet would be incorrect, as would be a reference to the tone of the market as strong, steady or weak. In certain sections for certain classes of goods the demand is unquestionably very satisfactory, but in the same territory for other goods the demand is light and somewhat intermittent. So in the matter of prices. Some lines are held very firmly with an upward tendency, but others are yielding and the market is characterized by a less firm tone. The same principle applies to the feeling of the trade. There are those who take a view of the situation which is far from sanguine, tempered as it is by the apprehension that trade is to be of moderate volume and at a lower level of prices, while others, pointing to the excellent conditions which prevail and the promise of agricultural well being, anticipate a condition of at least satisfactory business conditions and the recovery from the period of moderated urgency in demand, as the prosperity of the country insures in their estimation a large and profitable business. The market is thus as a whole decidedly uneven in the volume of business, tone of prices and confidence on the part of manufacturers and merchants. Meanwhile the changes in the general features of the situation are few. Prices on leading lines of Hardware are without important change. While concessions are being made in some lines, there have been advances in others. The general indications of the market remain promising, as the outlook for crops, so far as the harvests can be estimated at this time, is, on the whole, decidedly encouraging. Labor agitations continue to be something of a menace, but the indications point to a large amount of building during the season. Export movement continues liberal and varied. There is some complaint about collections, but on the whole the financial condition is sound. With the advance of the season an increase in trade is to be looked for.

Chicago.

(By Telegraph.)

The market, while active, is not as much so as it was a month ago. The character of purchases now being made indicates that the Hardware dealers throughout the West are well stocked up, and are only waiting for the expected heavy spring demand. In Builders' Hardware prices are being cut to the bone on lines not controlled absolutely by the combination. In other words, what price cutting is done is being done largely on lines that are being man-

ufactured by companies outside of the combination, and such cuts in prices are, of course, promptly met by the larger interests. There is not as much talk about a shortage on Screen Cloth, Lawn Mowers and Garden Tools as there was a month ago, and the Wire mills are better able to take care of current orders than they were some weeks ago, to such an extent that there is but little likelihood now of an advance in price of Wire products.

NOTES ON PRICES.

Wire Nails.—Demand is not as active as it was last month, but mills are still fully employed on contract orders. Prices remain firm. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carload lots	$1.90
Retailers, carload lots	1.95
Retailers, less than carload lots	2.05

New York.—While demand for small lots from store has not been excessive during the month of April, it will compare favorably with the corresponding period of a year ago. From nearby points the trade is more active than in this city. Quotations are as follows: Single carloads, $2.10; small lots from store, $2.20.

Chicago, by Telegraph.—Business continues to decrease somewhat, and there is but little difficulty in meeting the buyers' wishes in point of deliveries. Prices remain as follows: Carload lots to jobbers, $2.10 per 100 pounds; less than carloads to jobbers, $2.15 per 100 pounds; carloads to retailers, $2.15 per 100 pounds; less than carloads to retailers, $2.25 per 100 pounds, all f.o.b. Chicago.

Pittsburgh.—Demand for Wire Nails is only fairly active, showing a large falling off this month, as compared with March. However, the mills are working to full capacity on the heavy contracts placed some time ago, and which will take several months yet to fill. All the mills are still away behind in deliveries. Prices are firm, but without change. We quote: Wire Nails $1.90 in carloads to jobbers, $1.95 in carloads to retailers and $2 to $2.05 in small lots to retailers, all f.o.b. Pittsburgh, 60 days, or 2 per cent. off for cash in 10 days, plus actual rate of freight to point of delivery.

Cut Nails.—While demand is not extremely active, requirements are fair. The mills are having less difficulty in filling orders promptly. Quotations are as follows for Steel and Iron Nails, in all quarters: $1.75, base, carloads, and $1.80 in less than carloads, f.o.b. Pittsburgh, plus freight in Tube Rate Book to point of destination; terms 60 days, less 2 per cent. off in 10 days.

New York.—Similar conditions exist in Cut as with Wire Nails regarding demand. Some difficulty is experienced in obtaining prompt shipments of Cut Nails from mill. Quotations are as follows: Carloads on dock, $1.89½; less than carloads on dock, 1.97½; small lots from store, $2.05.

Chicago, by Telegraph.—Association prices are being adhered to fairly well. They are as follows: Carload lots, both Iron and Steel Nails, Chicago, to jobbers, $1.91½, base; less than carloads, $1.96½. Retailers and large consumers pay 10 cents per 100 pounds above jobbers' prices. Jobbers sell at from $2.10 to $2.30, base, f.o.b. Chicago warehouse, according to customer, size of order, &c.

Pittsburgh.—We note a fair demand for Cut Nails and prices are well sustained. The mills are able to fill orders promptly, the supply of cars and Steel being better than for some time. We quote Steel and Iron Cut Nails at $1.75, base, in carload lots, and $1.80 in less than carloads, f.o.b. mill, terms 60 days, less 2 per cent. off in 10 days.

Barb Wire.—New business is not as large in volume as it has been, but is of fair proportions. Mills are kept busy to a large extent in making shipments on contract orders. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Galv.
Jobbers, carload lots	$2.20	$2.50
Retailers, carload lots	2.25	2.55
Retailers, less than carload lots	2.35	2.65

Chicago, by Telegraph.—Business has slackened up sufficiently to permit mills to catch up with their orders. Prices are unchanged, as follows: Carload lots, Painted Wire, $2.40; Galvanized, $2.70; to retailers, carload lots, Painted, $2.45; Galvanized, $2.75; to retailers, less than carload lots, Painted, $2.55; Galvanized, $2.85; Staples to jobbers, $2.25 for Plain and $2.65 for Galvanized, with 5 cents advance to retailers.

Pittsburgh.—The mills are employed principally now in filling old contracts for Barb Wire, but a fair amount of new business is still coming in. Prices are being firmly held, but are without change. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Galv.
Jobbers, carloads	$2.20	$2.50
Retailers, carloads	2.25	2.55
Less than carloads	2.35	2.65

Smooth Fence Wire.—Mills are now having an opportunity to catch up with back orders, owing to the decrease in new business. Quotations are as follows, f.o.b. Pittsburgh; terms, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	$1.80
Retailers, carloads	1.85
Less than carloads	1.95

The above prices are for base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances, as follows:

	6 to 9	10	11	12&12½	13	14	15	16
Annealed	Base.	$0.05	.10	.15	.25	.35	.45	.55
Galvanized	$0.30	.35	.40	.45	.55	.65	1.05	1.15

Chicago, by Telegraph.—A good business is being booked, but there is a sufficient decrease to put a stop for the present to all talk of advances in prices. Prices remain as follows: Smooth Fence Wire, sizes 6 to 9, $2 per 100 pounds in carload lots to jobbers, f.o.b. Chicago; $2.05 per 100 pounds to retailers in carload lots and $2.10 in less than car lots.

Pittsburgh.—Demand has quieted down a good deal, but this is giving the mills a chance to catch up on back orders, on which they are far behind. We quote as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days: Plain Wire, $1.80, base, for Nos. 6 to 9, in carloads to jobbers, and $1.95 to $2 in small lots to retailers; Galvanized, 30 cents extra for Nos. 6 to 14.

Sheet Zinc.—Under date of April 20 announcement is made by Matthiessen & Hegeler Zinc Company, La Salle, Ill., of an advance in the price of Sheet Zinc to $6.20 per 100 pounds, f.o.b. cars, La Salle, in 600-pound casks, subject to the usual discounts for quantities.

The Rubber Goods Market.—The demand for Mechanical Rubber Goods during the first quarter of this year was somewhat lighter than during the same period of 1903, though to-day the activity of the factories would indicate that buying has begun to improve. While the comparative dullness of trade during the winter months has had various explanations, doubtless the chief cause was the prices asked by manufacturers, in view of the higher cost of raw materials than had prevailed during the two years preceding. Not only has crude Rubber been higher for months past than for almost any other previous period of the same length, but the increased cost of cotton fabrics has been even more marked. Many consumers of Rubber Goods were disposed to delay buying, in the hope that the high prices were only temporary, but the conditions not having improved, and Rubber Goods in certain lines being in the nature of necessities, buying has increased in volume. The advance in the prices of Rubber Goods has been neither uniform in rate nor due to any concerted action by manufacturers, and no figures can be given as representing the scale of advance. On the evening of April 21 representatives of the leading Mechanical Rubber Goods factories attended a dinner at the Hotel Savoy, in New York, but it can be asserted that, whatever may be the outcome in the way of a permanent organization, the meeting referred to was purely social in character, and that the regulation of prices of goods was not considered. There are nearly 100 factories in this branch, with varying grades and classes

of products, and also with varying degrees of financial strength, to say nothing of different selling methods—conditions which in the past have usually led to the failure of any agreements respecting the selling prices of their output. Crude Rubber is a little lower than at the beginning of the month, fine Para grades, which were then quoted at $1.12 a pound, now being obtainable at, say, $1.08, but this is a slight decline, and one which may be followed by a rise in the event of still further improved consumption. Besides, this is the season of light receipts, the next large arrivals not being due before about November. One factor in the present high prices of Rubber is the increasing tendency of large manufacturing concerns to buy their raw materials well ahead, so that stocks in the open market are smaller than for very many years. This policy will, to a certain extent, render Rubber Goods less liable to fluctuations in cost and selling price, and operate to the advantage of the manufacturers, and incidentally to that of the dealers. It should be added that the 12 months just closing have seen the largest consumption on record of Rubber for boots and shoes, while the character of the winter was such as to deplete stocks of goods in this line. Hence the Rubber footwear makers are planning very large operations this summer, which will increase the demand for new Rubber. As for cotton, while there has been a break in the much discussed "corner" attributed to Mr. Sully, the prices of raw cotton and of cotton duck remain at a level which is still unfavorable to the Rubber trade. This is the busy season in Bicycle and Automobile Tires, the demand for the latter being particularly heavy, but manufacturers, as a rule, insist that they are unable to secure prices commensurate with the cost of the materials used.

Paris Green.—Some shipments on contract orders are going forward, but there is little new business. Market conditions are unchanged, and the base quotation of 11 cents in Arsenic kegs or casks is general. Most manufacturers are asking the customary advances, but some are naming less than the regular advances on the smaller packages.

Cordage.—Weather conditions are not conducive to a revival of the Rope business, and demand is consequently rather disappointing to manufacturers. Quotations, on the basis of 7-16 inch diameter and larger, are as follows: Pure Manila, 12 cents per pound, with a rebate of ¼ to ½ cent per pound to largest buyers; other grades of Manila, 10 to 11 cents, according to quality; pure Sisal, 9¼ cents, with ¼ cent rebate to largest buyers; Mixed Sisal, 8 cents per pound, with no rebate.

Glass.—At a meeting of Window Glass manufacturers held in Cincinnati, April 14 and 15, 80 per cent. of the productive capacity of the country was represented. The National Association of Window Glass Manufacturers was formed, and officers and directors were elected. A committee on by-laws was appointed, to report at the next meeting of the association, to be held in Cleveland May 11. From statements showing the total stocks in the hands of all manufacturers, and in view of small stocks in the hands of the jobbing trade, it was estimated that there would not be enough Glass made by June 15 to supply demands to September 1. The association announced the lowest prices to jobbing trade as follows: From April 15 to May 1, 90 and 5 per cent. discount from the list of January 1, 1901; from May 1 to May 15, 90 per cent. discount from the same list. At this point the above announcement of an advance in prices has not stiffened the market. Quotations by jobbers remain unchanged, but are only nominal, as what little business there is is eagerly sought at less than regular quotations, which are as follows: Single or Double, first three brackets, 90 and 10 per cent. discount; all other sizes, 90 and 20 per cent. discount from jobbers' list of December 16, 1902. The United Plate Glass Company, who were formed the early part of March, 1904, through whom it was intended to market the product of the nine factories outside the Pittsburgh Plate Glass Company, are temporarily, possibly permanently, out of business. The jobbers who were interested in the company have been able to buy Plate Glass from about 15 to 20 cent. cheaper than heretofore. The manufacturers have now withdrawn prices, and are quoting those ruling in September, 1903, which are about 20 per cent. advance on those in force April 15, 1904. The market in this city has been irregular, quotations by jobbers being from 80 and 20 to 80 and 20 and 5 per cent. discount. The result of the dissolution of the new company has been to strengthen the market. Some jobbers have given notice that after May 1 old prices will be asked, which probably means that for Eastern territory 80 and 10 and 5 per cent. discount will be asked.

Spirits Turpentine.—A temporary improvement in demand characterized this market during the early part of the week, with last week's prices unchanged. Quotations, according to quantity, in this city are as follows: Oil barrels, 58 to 58½ cents; machine made barrels, 58½ to 59 cents. Receipts in the South are reported light owing to unseasonable weather which has retarded the new crop.

Oils.—*Linseed Oil.*—Demand is light and confined largely to small lots. The price of flax seed has dropped 10 cents per bushel during the past week, without, however, affecting the price of Oil. The market remains firm. Quotations are as follows: City Raw, in lots of five barrels or more, 42 cents; in lots of less than five barrels, 43 cents per gallon; State and Western Raw, 39 to 40 cents per gallon. Boiled Oil, the usual 2 cents advance per gallon over Raw.

PRESENTATION TO LORING COES.

LORING COES of Worcester, Mass., president of the Coes Wrench Company and the first American patentee of the Screw Wrench, was 92 years old Friday, April 22, and his many friends, including his employees, took occasion again to show him the esteem in which he is held. A great number of congratulatory letters from all parts of the country brought him the greetings of those who could not extend them in person, including many in the Hardware trade, some of whom have had business dealings with him for a great many years. Mr. Coes is as active in the management of his large business interests as he was a quarter of a century ago, and in spite of his great age is still the working head of the Coes Wrench Company, which now includes the Machine Knife business conducted under the name of Loring Coes & Co., Incorporated.

The employees of the Coes Wrench Company could not let this anniversary pass without a substantial memento of the day and presented Mr. Coes with a splendid sterling silver loving cup. The men from all over the shops gathered at the office where Mr. Coes was at his desk, and Frank L. Coes, his grandson, acting as spokesman for the party, made a brief presentation speech. Mr. Coes also received a wealth of beautiful flowers from other friends and business associates. As an evidence of his excellent health he is about to start on his forty-third annual fishing trip to the Rangeley Lakes, in Maine, where he is known as one of the most skillful of fishermen.

It was in 1840 that Loring Coes and his brother, long since dead, began the manufacture of Screw Wrenches at Worcester. Theirs was the original patent on this kind of Wrench. Since that time, nearly 65 years ago, Loring Coes has taken out scores of patents on Screw Wrenches, several of them since he became a nonagenarian. His mechanical genius has extended into the field of Machine Knives and their manufacture, and a great deal of machinery used in the manufacture of Knives and Wrenches has been designed and patented by him. Two years ago Mr. Coes took on additional business responsibilities when he bought the interests of his associates in the Wrench business and became the sole owner. His works are running so full of business that they have had difficulty in keeping up with orders.

JAMES E. PATTON, JR., has been elected president of the Patton Paint Company, Milwaukee, Wis., to succeed his father, the late James E. Patton, Sr., who died in February last. The new president was formerly vice-president of the company, and for the past three years has been located at Pittsburgh as an officer of the Pittsburgh Plate Glass Company.

THE CATALOGUE HOUSE QUESTION.

A WORD FOR THE ATLANTA MEETING.

FROM A WESTERN MERCHANT.

IT is admitted on all sides that much good has come about through the medium of the many associations now in existence, and in very many instances the good has come to stay. In fact, the general trade may be said to be years in the front of where it otherwise would have stood had not existing associations come "a borning." The bringing of men together in any line of trade or for any specific purpose has always been fraught with results to be obtained in no other way. The simple feeling of brotherhood, the knowledge that we are all of a trade, the meeting and knowing men we have never known before, is worth all the travel and all the trouble it takes to reach one of these gatherings, passing by the known benefits that come from interchange of ideas, from exchange of business methods, from results to be obtained in numbers and in union.

Brotherhood and Fraternity

The first jobbers' meeting was a very small one; the first State retailers' meeting consisted of an unlucky thirteen; after ten years it reaches between four and five hundred. What the Manufacturers' Association covers I cannot say, but I know it meets with the hearty approval of all who are members. There are now in existence 18 State associations that are classed as retail, and a National Retail Association, with which, we believe, every State body is now affiliated, or will be before the next annual meeting. Every one of these is prosperous and adding new members each year, making results in every instance along the lines of betterment, and forming a solid wall with which to back the greater National Retailers' Association.

Small Beginnings

It has been a hard struggle to get the average Hardware merchant from his home, to persuade him into organization, to get him to tell his troubles, to secure his help in trying to right them; but the best evidence that there is strength and help in these meetings—that he does not regret being persuaded—is that he goes on from year to year, and seldom, if ever, has a good member dropped out for cause. The National Association was even a greater struggle—in part, perhaps, because of a first failure, due to an effort to organize before its time, and with no small or State associations to affiliate with and make the greater body. Its standing to-day takes rank with that of any other organization in the country, officered by brainy men who sacrifice time and means to see that its best interests are in no wise neglected. It will in time stand out as a power for good as against the wrongs that are constantly creeping into the trade, with an eye single to the benefits to be secured for the smaller State organizations, pleading for those things that are right—ready and in a position to fight for them if needs be when pleading will not bring results—securing every advantage that may be had with allied power. The National Retail Hardware Dealers' Association will be heard from often and forcefully in the years to come. Not only as to those whom it is supposed to care for, but in the councils of other and, perhaps, larger bodies, we trust in the councils of the jobbers' and manufacturers' associations. The interests of all are so intimately woven together that it is hard to conceive that it should be otherwise. If we remember rightly, they were represented at the Atlantic City meeting of the jobbers and manufacturers last November. The writer knows nothing as to the preparations or programme for the coming meeting at Atlanta, but believes it would be the silent wish of every retailer in the country that at that meeting, where so much of interest will be brought forward, where the all important subject of the catalogue house will largely lead, the retail trade of the entire country would benefit largely through representation of the National Retail Association.

A Struggle

A Growing Power

All Getting Together

Retail Representation at Atlanta

Associations are growing, and as they grow we know more and more of their necessity. As it is, less than half the States are organized at all. One organization brings another. Nearly every local organization in existence to-day is a result of a State association, and it is the local one from which we derive the constant benefit—not alone the benefit that comes of prices, but of manhood and neighborhood, and the pleasure of passing a competitor on the same side of the street without turning your head from him.

Growth of Associations

All this leads back to the one fact that in association all interests are alike—that of maker, jobber and retailer. Injury to one is injury to all, and injustice to one is injustice to all. In plain language, they "must hang together." So long as goods are manufactured they must be distributed, and that distribution must be done through the jobber if properly done; the jobber has nowhere else to go than to the retailer, and so I say, what is for one is for all; what wrongs the retail store also wrongs the maker of the goods, and whether it be the variety store, the department store, the catalogue house, or what not, we must all stand together, and the standing together will come eventually through "Hardware Associations."

Unity of Interest

REFUSING TO SELL GOODS HANDLED BY CATALOGUE HOUSES.

FROM A MERCHANT IN DELAWARE: I have a catalogue of one of the catalogue houses, and everything that is quoted in this catalogue I try to avoid handling if possible. Every merchant should do the same, and let the manufacturers realize what they are doing. The sooner the jobbers and retailers get together and cut these lines out the better. The first thing the jobber should secure from a manufacturer is a guarantee that his goods shall not be placed with the catalogue house. They should devise some plan and act at once. Every article I see advertised in the catalogue that I carry in stock I write the manufacturer to explain how he expects me to sell his goods when he allows the catalogue houses to sell them at jobbers' prices. I think if every retailer and jobber would do this the manufacturer would soon see his error.

AN ANSWER TO "PLAIN FACTS PLAINLY TOLD."

LAMONT, IOWA, April 25, 1904.

To the Editor: I think that the J. Stevens Arms & Tool Company are laboring under a wrong impression regarding part of my article in your issue of April 14. In this I stated the facts as they were some time ago, but omitted to say that the Stevens people, through what might be called their individual exertions, had put a stop to the indiscrimate cutting of prices on their goods by the mail order houses, and that I for one appreciated their efforts, and have been carrying their goods in stock ever since and selling them at catalogue house prices.

If the manufacturers of other standard lines carried by these people would give this matter the same attention and time and spend a little money watching things as the Stevens Company did, it would put the retailer on a better footing to compete with the catalogue houses, as the wholesale prices (to us) that they print on some of the most standard lines are the hardest things to explain to a customer. This refers to standard makes of Carpenters' Tools and other lines at the present time as much as it formerly did to the Stevens goods. It happened, however, that these goods came to my mind first, and I apologize to them for bringing their line into the controversy without particularizing other lines. It perhaps may do them some good eventually, as I do not think that all retailers understood the exact facts of the case. I said that "the price the catalogue houses now made on these goods does not leave the retailer enough to pay for

handling them." This is not literally true, as anything that pays a reasonable per cent. profit pays for handling. I still think, however, that a Rifle should stand a little more profit than we get for them—say $3.25 for a Crackshot and $5.50 for a Favorite. The goods are worth it and could be sold for these prices and all parties satisfied.

I do not believe in robbing the public by charging such prices as were printed in their article. My price on the Range would not have exceeded $43, which would have included one Joint Pipe, a Damper, if needed, and the labor of setting Range up, and it would be blacked up in good shape. Ten cents is my price for a 6-inch Damper, and the same price for a common four-piece 6-inch Elbow. I do a great deal on the "Live and let live" theory, which, by the way, is a good one. I think that merchants in cities or larger towns get more for their goods than we do in the smaller towns.

I can't help thinking, however, that the change in the prices of these Rifles was partly due to outside pressure being brought to bear on the subject. I, for one, wrote the company a letter in regard to it, and they answered that they were doing their best to do away with the old conditions, and to their credit let it be said they accomplished a great deal. If so, this emphasizes more than ever one of the cures for the evil. If the larger retailers carried as small a stock of some of the lines of Carpenters' Tools priced in mail order catalogues as I do, which I am afraid they do not, it would be a surprise party to some of the manufacturers to take a trip through the country and visit the retail trade.

In regard to my signature not being attached to my former communication, would say that this must have been an oversight on the part of *The Iron Age*, as I signed it with the intention of it being published, not being ashamed to express my opinion, even though it did not convey the impression it was intended to.

I should like to hear from some of the manufacturers who have not done anything as yet to help the condition of affairs.

T. W. ROGERS.

JOH. BERNHD. HASENCLEVER & SOHNE.

THE house of Joh. Bernhd. Hasenclever & Sohne, Remscheid-Bliedinghausen, Germany, is said to be one of the oldest, if not the oldest Hardware exporting firm in Germany. She original firm's name was Bernhd. & Friederich Hasenclever, who established the business in 1695. It was reorganized in 1786, since which time to the present, 118 years, they have been doing business under the name of Joh. Bernhd. Hasenclever & Sohne. The business is largely in Argentina and Brazil, where there are four branch houses doing business under the name of Hasenclever & Co., the business in Rio de Janeiro having been established in 1828 and in Buenos Aires in 1874. The other branches are in Rosario on the River Plate, Argentina, and San Paulo, Brazil. The business consists largely of the exportation of Hardware, Agricultural Implements and kindred goods to their South American houses, a large part being of American manufacture. The growth of their trade in American goods has been such as to necessitate personal representation, and M. W. Boley has recently been appointed the purchasing and shipping agent of the house, with headquarters in the Battery Park Building, 21-24 State street, New York.

WATERBURY BRASS COMPANY.

THE WATERBURY BRASS COMPANY, Waterbury, Conn., have discontinued carrying a stock in New York City, and hereafter all orders will be filled by direct shipment from the Waterbury mills. The company express confidence that this change will not inconvenience the trade, as they will carry in Waterbury practically the same assortment of Sheet Brass, Wire, Rods, &c., that has been carried in stock in New York, and the excellent transportation and carting arrangements now existing will enable them to make deliveries of ordinary stock sizes on the day following the receipt of orders. The company will, however, continue an office in New York, which for the present will be at 122 Centre street, with a private telephone wire to the mills. This office will be in charge of T. M. Baker and G. H. Sherman, who will give the same careful attention to the wants of customers as heretofore.

DEATH OF JAMES A. FARLESS.

JAMES A. FARLESS, secretary of the New England Hardware Dealers' Association since its organization in 1893, died at his residence at Boston Saturday, April 23, aged 77 years. Mr. Farless was one of the best known figures in the Hardware field of Boston and vicinity, though not actively engaged in the trade, excepting as secretary of the Hardware Association, for 20 years.

James Augustus Farless was born in Salem, Mass., the son of Thomas Farless, February 2, 1827. At the age of 22 he entered the firm of Goldsmith, Newcomb & Farless of Boston. The firm were dissolved in 1858 and Mr. Farless engaged in business under the style of James A. Farless & Co., continuing for six years. In 1873 he associated himself with George W. Boynton and the business was continued as Farless & Boynton until 1883, when Mr. Farless retired. When a young man he served in the Massachusetts militia as a member of a famous Salem company, and held a commission as captain. He was often addressed as major by his old associates. He had not been in good health for a long time, never having completely recovered from the effects of a fall in 1902. Mr. Farless leaves a widow and two grandchildren.

JAMES A. FARLESS.

The directors of the New England Hardware Dealers' Association met Monday afternoon, 25th inst., with Vice-President John B. Hunter in the chair. A committee, consisting of D. Fletcher Barber of Chandler & Barber and F. Alexander Chandler of the Chandler & Farquhar Company, was appointed to draft suitable resolutions, and Henry M. Sanders of Henry A. Sanders & Co., treasurer of the association; F. Alexander Chandler, assistant secretary, and D. Fletcher Barber were chosen a committee to represent the association at the funeral, which was held at Salem on the 26th.

A NEW corporation has been formed to take over the business of the wholesale Hardware firm of Findlay, Roberts & Co., Baltimore. The new company are known as the Duke-Peterson Hardware Company, and are located at 308 West German street. The new company have a capital stock of $50,000, and are now ready for business. The firm of Findlay, Roberts & Co. were located at 25 Hopkins place and the entire stock was destroyed in the recent conflagration. This made it necessary for the new company to lay in a complete stock of goods. The officers are: President, W. B. Duke; vice-president, W. J. Hopper; secretary and treasurer, J. W. Peterson.

Letters from the Trade.

Our readers are invited to discuss in these columns questions of trade interest connected with the manufacture or sale of Hardware. We shall be pleased to have a free expression of opinion on subjects deserving the attention of Hardware merchants and manufacturers.

Suggestions in Regard to New Store.

FROM A MERCHANT IN SOUTH CAROLINA: I would be pleased to have suggestions concerning the following: I would like to know if in your opinion a store could be put up on a corner lot 55 feet deep by 57½ feet front, that would accommodate conveniently a retail business carrying about a $15,000 stock of General Hardware, Farming Implements, Stoves and House Furnishing Goods. I would like the building to be two stories high, using first floor for sales department and second floor for storage.

The trade are invited to send suggestions in reply to our correspondent's inquiry.

Manufacturers' Sale of Builders' Hardware to Contractors.

To the Editor: Previous to the adoption of the new schedule of prices on Builders' Hardware, which went into effect on February 15, the manufacturers steadily asserted that the reason no protection as to prices could be offered the dealers was because the manufacturers could not agree among themselves to anything. It seems, however, they did agree to send a salesman after every job in New York City, large or small, and as the prices they were able to give the contractor were always less (sometimes 25 and 30 per cent. less) than they could quote the dealer, the manufacturer invariably got the business. But each manufacturer was driven to this because every other manufacturer of Builders' Hardware did the same—so he said.

As a result this particular branch of the business has very largely been monopolized by the manufacturers during the past few years. I am speaking of New York City.

Then when the manufacturers found they could agree upon a schedule of prices for the dealer, they forgot (!) to make up a schedule for the contractor; so that they are always able to sell a contractor at prices as low as, or if need be lower than, those given by agreement to the dealer.

Now I maintain that the contractor should be left to the dealer (except, if you please, very large work like hotels and office buildings), who is better prepared to look after all his miscellaneous small wants, and that the manufacturers by bidding for the dealers' trade and also for the trade of his customer, the contractor or builder, have injured their natural customer, the dealer, and sooner or later will also injure themselves by this same method.

Indeed, the system has already worked great injury to the manufacturer because, while the dealer is expected to, and must, pay promptly for his purchases, the contractor cannot and does not do so. For that reason he ought to pay the dealer a profit over and above what the manufacturer charges—to pay for the accommodation which must be given him.

Then, too, if a dealer agrees to take the Hardware, irrespective of quantity, at a certain date, it is charged up to him on that date, and the time when he must pay for it hastens on apace. But the contractor simply says, "You hold it until the building is ready for it and charge it when you deliver it," and then he pays in two, four or possibly six months, or as soon as he receives his payments or final loan.

A Hardware manufacturer to-day has in his basement about $20,000 of Hardware for a hotel which was to be ready for it last August, and, as it is now progressing, will not want it next August. They do not feel called upon to carry stock for the dealers a year or more without pay. X. Y. Z.

The firm of J. M. Stouder & Co., Fort Wayne, Ind., have incorporated under the same name with a capital stock of $10,000.

H. S. HOWLAND, SONS & CO.'S FIRE.

THE large stock of Hardware of H. S. Howland, Sons & Co., Toronto, Can., was destroyed in the great fire which visited that city on the 19th inst. Their library of catalogues and other trade literature was also consumed, and as the firm have secured temporary quarters and resumed business, they request all manufacturers with whom they have had business relations to forward immediately, by express prepaid, copies of their latest catalogues, with prices. They desire through *The Iron Age* to express to their many friends throughout the country their deep appreciation of the kind sympathy which has been extended to them in every direction, as it would, they advise us, be impossible to answer all the telegrams and letters with which they have been favored.

TRADE ITEMS.

WILLIAM T. WOOD & Co., Arlington, Mass., manufacturers of Wood's Ice Tools, have added to their line the manufacture and installation of Ice Elevators and Conveyors. They state they are in a position to design and build Elevators to suit varying conditions and to superintend their erection.

H. J. MILLER'S SONS, Bridgewater, Mass., have purchased the Tack and Nail business of B. H. Woodsum Company, South Braintree, Mass., including machines and equipment complete, and moved it to their plant in Bridgewater. This will add largely to the facilities of H. J. Miller's Sons and enable them greatly to increase their output.

JOHN ECKERT, Hardware merchant, Madison, Ind., died on the 16th inst. The business will hereafter be conducted by Frederick Eckert and Edward Eckert under the style of John Eckert's Sons.

C. A. PETERSON, a well-known Hardware merchant of Oakland, Neb., died on the 7th inst. Mr. Peterson took an active and influential part in organizing the Nebraska Retail Hardware Merchants' Association, of which he was president during 1903.

ON July 1 D. R. Webb will retire from the old firm of H. W. Webb & Sons, jobbers of Hardware, Baltimore, Md. The business will be continued by W. C. Edmund and J. D. Galloway, as successors, under the style of Edmund & Galloway, 121 West Pratt street. Mr. Edmund has been with the old firm for 24 years—20 years as traveling salesman and four years as partner of D. R. Webb. Mr. Galloway has been with the firm for 15 years as bookkeeper.

CARPENTER-MORTON COMPANY, 77-79 Sudbury street, Boston, Mass., in the interest of their Campbell's Varnish Stains announce a Presidential guessing contest, open to users of the Stains. They believe this contest will materially increase the sales of the goods, and will be pleased to furnish particulars concerning it on application. In addition to manufacturing Paints, Colors, &c., the company also make Cow-Ease, a preparation intended to prevent fly pest on cattle and horses; Kno-Bug, a combined bug killer and potato grower, and the Matchless Sprayer.

ALIEN F. BRAY, a well-known Hardware merchant of Pawtucket, R. I., died on the 16th inst. from accidental asphyxiation. Mr. Bray was in his fifty-sixth year and was a native of Yarmouth, Mass. He was a member of the firm of A. F. & F. Bray, the latter being his brother, which business they established in 1879.

C. E. EALES, for several years connected with the American Mfg. Company, has accepted a position as traveling salesman in Southern and Western territory for the New York Cordage Company, 83 and 85 Wall street, New York.

THE CHANTRELL TOOL COMPANY, Reading, Pa., whose New York office has been at 103 Reade street, under the management of F. E. Hutchins, are moving next door to 101 Reade street. The increased business of the Chantrell Tool Company warranted the taking over of more room, which will give them added facilities for carrying a larger stock, they occupying the store floor, basement and cellar. Coincident with this enlargement, Mr. Hutchins will also

represent the Richards Mfg. Company, Aurora, Ill., manufacturers of a large line of Door Hangers, of which a complete stock will be kept for quick delivery.

THE NEW YORK BELTING & PACKING COMPANY, 25 Park place, New York, will about May 1 remove to 91-93 Chambers street, running through the block to Reade street, where they have leased the street floor, basement and cellar. This will give them much needed additional room in which to display examples of their Mechanical Rubber Goods, Interlocking Tiling and other productions, as well as affording much greater facilities for carrying an adequate stock. At the same time they will be more centrally located for trade purposes.

GEO. OWEN & Co., 95-97 Liberty street, New York, export buyers, have recently been appointed sales agents for the Eastern States and export of the Red Cross Cement, manufactured by the Edgecombe Company, Indianapolis, Ind. This is a preparation designed for making tight screw joints in piping carrying steam, water, gas and air. The feature of it is that it remains in a semi-liquid state always, at the same time acting as a lubricant, so that after the joint has been in existence for a long period the fittings can be easily and quickly taken apart without fracture. They refer to it as much superior to Red Lead for such purposes.

BRITISH LETTER.

Offices of *The Iron Age*, HASTINGS HOUSE, NORFOLK ST., LONDON, W. C., April 16, 1904.

The Week's Hardware Market.

THE gradual improvement to which I have previously referred continues. The good weather we have been having recently has naturally led to a better demand for Horticultural and Building Tools, and the reduction of the bank rate from 4 to 3½ per cent. will let loose a considerable amount of cash, which will make itself beneficially felt not only in agricultural but in the industrial centers. The improvement is felt more in the heavy Iron foundry than in the light, but the latter is not without orders. The Edge Tool makers are busy on foreign and colonial orders. The demand for best Locks continues, but common qualities are in only moderate request. Steel Toys are selling well, and Tin Plate Goods of various kinds are also in active demand. Considerable activity is evinced in the Iron Hurdle and Fencing departments, and the trade in Enameled Sign Plates is as good as ever. Pumping Machinery for irrigation and mining purposes is going abroad in large quantities. The trade in Galvanized Goods, particularly Corrugated Sheets, continues upward, and although the South African trade is not as good as it was immediately after the war, this is more than counterbalanced by an improvement in orders from India, Australia and Argentina.

On overseas account the best markets are India, South America and Australia. European orders are a little dull, the business with Germany especially being disappointing; but we are doing better with France, and good orders for General Hardware have been received from Holland on account of the Dutch East Indies. Without going into further particulars, it may be said generally that the second quarter of the year has opened out better than was ever expected.

Employment in the Hardware Trades.

From returns received from employers' associations and trade unions the following reports indicate the state of employment during the month of March: Employment generally with brass workers is moderate. Nuts, Bolts, Nails, Rivets, &c., are generally reported as quiet, and in some cases slack. Chain is in moderate request. Anvil and Vise makers report employment as fair. Some of the manufacturers of Springs and Axles are fairly busy, while others report an unsatisfactory condition. Bits, Stirrups and Iron Work for harness and cart gear are in small demand. Lock and Key trade is poor, with a large amount of short time. A moderate demand is chronicled for Hollow Ware and Iron Fencing. The File demand is fair, while that for Edge Tools is moderate. In Sheet Metal most centers report business as fair to moderate, but others represent the situation as slack. Cutlery workmen are moderately employed. Some improvement is noted in Needles, while Fish Hook makers are well employed and overtime continues. Gold, Silver, Brittania Metal, &c., is generally slack. Wire work is in fair request, while farriers are generally quiet.

The Swiss Tariff.

Considerable consternation is being felt in British export houses having trade connections with Switzerland at the proposed new general customs tariff of that country. In view of the approaching termination of commercial treaties at present existing between Switzerland and other powers, the Government of Switzerland is seeking to impose a completely new schedule. The report of the Birmingham Chamber of Commerce on this point is well worth the attention of American exporters, and I append herewith the section referring to it:

The customs duties now levied on most of the articles are duties which are fixed by existing commercial treaties between Switzerland and other powers, and unless special arrangements are made with the powers concerned no alterations of the present rates can be made until these treaties expire. It should be observed that by virtue of the most-favored-nation stipulation of the treaty of 1855 between Great Britain and Switzerland, any reductions of the new rates of duty that may be made on any articles will apply to similar British goods imported into Switzerland, but it is uncertain whether his Majesty's Government will be able to secure for this country any special conventional rates on the principal articles of British export to Switzerland. At the outset your committee would point out that, speaking generally, the proposed new tariff follows on the lines of the proposed new tariffs of Germany, Austria-Hungary and Russia, which have previously been under consideration by the council. The customs duties on articles which are in a very early stage of manufacture have, on the whole, not been increased, while in some instances they have been slightly reduced. The same may be said of other articles, such as Sheet Iron, Corrugated Sheet Iron, &c., but the customs duties on the finished products of manufacture have been greatly increased.

THE ATLANTA CONVENTIONS.

C. B. CARTER, Knoxville, Tenn., secretary-treasurer of the Southern Hardware Jobbers' Association, under date of the 19th inst., issues the following circular relative to Southern railway rates to Atlanta for the conventions of the jobbers and manufacturers' associations, May 24-27:

We are pleased to announce officially that the railroads composing the Southeastern Passenger Association have granted a rate of one first-class fare, plus 25 cents, for the round trip from all points in territory south of the Ohio, Potomac, and east of the Mississippi rivers. The 25 cents included in the rate is to be reported to the terminal line delivering the business in Atlanta. We wish to impress upon you the following information:

Tickets are limited to continuous passage in each direction and will be sold May 21, 22 and 23, with final limit May 31.

A special validating agency, under the charge of Joseph Richardson, special agent, will be located contiguous to the main entrance to the Union Station, Atlanta, and will be open one hour before the schedule time of departure of each train, May 21 to 31, 1904, inclusive. On those dates no other agent in Atlanta will be authorized to validate return portions of any round-trip tickets.

Original purchasers of tickets may secure an extension of the final limit by personally depositing their tickets with Joseph Richardson, special agent, Atlanta, Ga., between the hours of 8 a.m. and 6 p.m., not earlier than May 21 nor later than May 31, 1904, and upon payment of fee of 50 cents at the time of deposit, at which time a receipt will be issued to holder of ticket.

The reason for this extension is that many of our more Eastern members and manufacturers may desire to take in the St. Louis Exposition before returning home. This can be done by depositing ticket as above outlined. Very cheap round trip rates can be secured from Atlanta to St. Louis and return.

This is the first time within the history of our association that we have secured a one-fare rate. We promised the railroad people that the attendance would be very large, and we are going to ask you to assist us in making it so.

NATIONAL HARDWARE ASSOCIATION.

THE regular semiannual meeting of the Executive Committee of the National Hardware Association will be held in Boston, May 9, 10 and 11. Arrangements are making by the New England Iron and Hardware Association for the entertainment of the visitors, and they will be given a formal reception at the Country Club, Brookline, on the 10th, at which time and place the monthly meeting of the New England Association will be held.

REQUESTS FOR CATALOGUES, &c.

The trade are given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

REQUESTS *for catalogues, price-lists, quotations, &c., have been received from the following houses:*

FROM DRAKE HARDWARE COMPANY, who have succeeded W. F. White at Shelby, Ohio, in the Hardware, Stove and Paint business.

FROM CHASE & BREED, who are dealers in general Hardware at Medina, N. Y.

FROM H. N. MARSHALL, Hunnewell, Kan., who has bought the Hardware, Stove, Paint and Implement business of Ward & Sanders.

FROM MEAD MERCANTILE COMPANY, Mead, I. T., who have purchased E. A. Whittington's Hardware and Agricultural Implement business.

FROM E. E. GRIFFIN, West Derby, N. H., who has succeeded C. H. Allen in the Tin and Granite Ware line, and will add general Hardware.

FROM LANGFITT & Co., who have bought J. C. Meacham's Hardware business at Harlan, Iowa.

FROM J. S. BENN, who has succeeded Baily & Higgins in the Hardware, Stove and Implement business at Benton, Iowa.

FROM JESSE CHILD, Richmond, Mo., who has purchased the Hardware, Implement, lumber and furniture business of M. A. Smith.

FROM LOGAN HARDWARE COMPANY, Logan, W. Va., who have lately been chartered with a capital of $10,000, to carry on the wholesale and retail business in Hardware, Stoves, Farm Implements, Paints, Mill and Mine Supplies, Sporting Goods, &c.

FROM J. W. BRADBURY, Cowden, O. T., who has lately commenced the Hardware and Implement business.

FROM J. H. MCGRATH HARDWARE COMPANY, Hastings, Neb., who have been incorporated with a capital of $25,000. The company are successors to Alexander F. Meyer, and will do both a wholesale and retail business.

FROM POOL, BENTS & Co., who have succeeded Pool & Sill in the Shelf and Heavy Hardware and Dairy Supply business at Watertown, N. Y.

FROM CHASE & BREED, Medina, N. Y., who opened up in the Hardware, Stove, Implement, Paint and Sporting Goods business April 15.

FROM S. O. MANCHESTER, Niles, Ohio, who has succeeded F. L. Head & Co. in the Hardware, Stove and Agricultural Implement business.

FROM D. H. GREGORY COMPANY, Princeton, Mass., who have lately been incorporated with a capital of $6000, to carry on the general merchandise business, including Hardware, &c.

FROM KING-EELLS HARDWARE COMPANY, East Liverpool, Ohio, incorporated with a capital stock of $25,000, to conduct the wholesale and retail business in Shelf and Heavy Hardware, Stoves and Tinware, Paints, Mantels, Tile, &c.

FROM TOTTEN HARDWARE COMPANY, Waterloo, Iowa, who have lately commenced the Hardware, Stove and Implement business.

FROM CARHART BROS., Mapleton, Iowa, who desire catalogues and quotations relating to Furnaces, Hot Water and Hot Air Heating Plants, &c., a department which they have recently added to their Hardware, Stove and Furniture business.

FROM SHAMPNAS & PRITCHARD BROS., Oregon, Wis., who are successors to H. M. Jaycox.

FROM DEVORE HARDWARE COMPANY, Supply, O. T., who have succeeded E. Devore.

FROM HOME HARDWARE & PLUMBING COMPANY, Cambridge Springs, Pa., who have been incorporated with a capital of $12,000. The company are opening up in a new building just completed.

FROM WM. B. SCOTT & Co., Newport, R. I., who about June 1 will open up in business as dealers in Hardware, Cutlery, Paints and Oils, Woodenware, Glass, Seeds, Farm and Lawn Supplies, &c. Mr. Scott, who has associated himself with his brothers Frank G. and George L., under the above style, was for 25 years connected with the G. A. Weaver Company, first as buyer and since its incorporation as assistant manager and stockholder.

FROM H. S. HOWLAND, SONS & Co., Toronto, Can., whose establishment was destroyed in the great fire in that city a few days since, as noted more at length in another column.

RETAIL HARDWARE, IMPLEMENT & VEHICLE ASSOCIATION OF THE INDIAN TERRITORY.

THE annual meeting of the Retail Hardware, Implement and Vehicle Association of the Indian Territory will be held in Oklahoma City, O. T., on May 10 and 11, with headquarters at the Grand Avenue Hotel. This meeting is being held in the adjoining territory, with a view to interesting Oklahoma merchants in the association, and it is expected that quite a representation of the trade in Oklahoma City, East and North Oklahoma will be in attendance. Possibly an association covering both Territories may result.

AMONG THE HARDWARE TRADE.

Cole-Brelsford Hardware Company, Council Bluffs, Iowa, wholesale and retail Hardware, Stoves, House Furnishing Goods, &c., have disposed of their business to Paddock-Handschy Hardware Company, who continue at the old stand.

Jno. B. Huff, formerly in partnership with A. F. Miller in the Hardware business, has succeeded the J. P. Clagg Hardware Company, Webster City, Iowa.

The Peters Hardware Company, Emporia, Kan., have been incorporated with a capital stock of $40,000. The business is both wholesale and retail. The company have entirely remodeled the old establishment, and are now in much better position to take care of their customers than heretofore.

H. E. Burtt, Woodstock, N. B., Wholesale and retail Hardware, Agricultural Implements, Paints, Oils, Carriages, &c., have lately moved into new quarters, which are much better adapted to the requirements of his growing business.

Henry Martin is successor to Weakley & Watson in the wholesale and retail Hardware, Stove, Farm Implement, Paint and Sporting Goods business in Goldthwaite, Texas. Their business at Brownwood has been sold to Weakley Hardware Company.

E. B. Stout has recently engaged in the retail Shelf Hardware, Stove, Tinware and Implement business in Carrier, O. T.

Black & Co. are successors to Black, Swezey & Co. in the Hardware, Stove, Furnace and Roofing business in Andover, Ohio.

Hawes-Owsley Hardware Company are expecting to open up in the wholesale and retail business about June 1 next.

Densmore & Marshall have succeeded Raymond & Hall in the Hardware, Stove, Paint and Sporting Goods business in Mason, Mich.

Allen Hardware Company, Charlotte, N. C., have increased their capital stock to $100,000, of which $75,000 has been paid in.

Bomar Hardware & Buggy Company, Waco, Texas, have incorporated with a capital stock of $20,000 to carry on the wholesale and retail business in Hardware, Stoves, Agricultural Implements, Sporting Goods, Buggies, &c.

Jones & Paterson have purchased the Hardware, Implement and Furniture business formerly carried on by J. F. Pemble in Paton, Iowa.

The business of C. E. Haven, dealer in Hardware, Stoves, Farm Implements, Paints, Sporting Goods, Crockery, House Furnishing Goods, Plumbing Supplies, &c., Santa Rosa, Cal., has been incorporated under the style of C. E. Haven Company, with a capital stock of $50,000.

J. M. Bitts has bought the Hardware and Implement business formerly conducted by Fryberger & Snyder in Salem, Neb.

G. P. Durbin & Son are successors to Robinson & Spelman in the Hardware, Stove, Implement, Paint and Sporting Goods business in Kenton, Ohio.

I. Kauffman & Son have recently entered business at El Monte, Cal., handling Shelf and Heavy Hardware, Stoves, Agricultural Implements, Sporting Goods, Buggies, Wagons, &c.

Gavin Hardware Company are successors to William A. Fuller & Co., at Leominster, Mass.

William Krombach has disposed of his Hardware and furniture business in Keystone, Iowa, to the Keystone House Furnishing Company.

J. A. Hutchings, dealer in Hardware, Kokomo, Ind., has sold his stock to M. W. Coat and J. I. Shade, who will continue the business at the old stand.

Otto Rixen has purchased the Hardware and furniture business formerly conducted by Perry & Dewell at Cushing, Iowa.

A. Rothgeb is successor to Adams Hardware Company in the Hardware and Stove business in Snyder, O. T.

Northcutt Hardware & Furniture Company, Longview, Texas, have been incorporated with a capital stock of $30,000, with a view to conducting the wholesale and retail business in Shelf and Heavy Hardware, Agricultural Implements, Paints and Oils, Sporting Goods, &c. They are successors to W. G. Northcutt and intend to put a traveling man on the road and increase the wholesale part of the business materially.

Henry Altorfer & Co. have succeeded Altorfer & Sauder in the Hardware and Implement business at Roanoke, Ill.

Wood Hardware Company have recently embarked in business at La Grange, N. C.

Crosby & Simpson have bought the Hardware and Stove business of Summerville & Hyde in Savannah, Mo.

The firm of Thompson & Hoague, for 20 years in the Hardware business at Concord, N. H., have incorporated under the style of Thompson & Hoague Company. The capital stock is $50,000, and the following are the officers: Edgar C. Hoague, president; Willis D. Thompson, treasurer; H. Morton Hoague, secretary. A wholesale and retail trade in Shelf and Heavy Hardware, Agricultural Implements and Sporting Goods is done.

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FACTORY COST AND BUSINESS METHODS.

COST SYSTEM OF ONEIDA COMMUNITY IN ITS HARDWARE FACTORY.

BY G. W. NOYES.

PART IV. CONCLUSION.

DIRECT COST.

THE cost obtained by charging each lot worked on with its share of the current General Expense gives an accurate view of the profitableness of the different jobs as compared with one another. But when the question arises

Hardware Dept.
Analysis of General Expense 1903.

		Amount	Per Cent
Direct	Work not charged to Lots	1965 43	.03 04
Material	Used in Manufacture	6509 51	.10 00
Maintenance	of Dies, Tools & Mach.	16542 17	.25 60
Misc.	Productive Expenses	8097 09	.12 48
	Productive Group. Total	33114 20	.51 12
Superintendence		8363 55	.13 10
Office		8541 81	.13 20
Maintenance	of Buildings	2591 84	04 01
Heat, Light & Power		2374 86	03 67
Interest, Rent & Insurance		2627 24	04 06
Misc. Non-Productive Expenses		7017 61	.10 84
	Non-Productive Group. Total	31516 91	.48 88
Total Productive & Non-Productive Groups		64681 11	.100 00

Fig. 13.—Analysis of General Expenses.

as to accepting or declining a job offered at a very low price this figure may be misleading. The reason for this is that some of the items classified as General Expense, such as superintendence, heating, lighting, &c., are constant, or approximately so, whether the jobs worked on are few or many. Hence a job which shows a loss, when considered solely in the light of its "cost f.o.b.," may, nevertheless, help bear the burden of unavoidable general expense, and so make the total profits of the factory larger than they would be without it. In order to act intelligently in such cases, it is necessary to know the direct, unavoidable cost of the article in question; that is, the cost which would actually be saved if the job were thrown out. The Direct Labor and Materials are most

HDW. DEPT. Cost of Selling	1901		1902		1903								
Advertising	1391	05	1603	85	1797	71							
Agents	17166	02	19910	46	23188	05							
Bad Accounts	512	17	209	55	116	30							
Catalogues	337	36	219	75	640	18							
Chicago Office	5145	40	5230	85	6895	28							
Electrotypes	222	72	240	76	86	72							
Misc.	293	36	296	59	193	86							
New York Office	7609	08	7776	80	7891	39							
Patents	121	80	141	10	35	05							
Total	32218	75	36627	71	40844	54							
Per Cent on Sales	8	11	8	43	5	81							

Fig. 14.—Card Showing Comparative Cost of Selling (Card Measures 3 x 5 Inches).

obviously of this nature, and the footing of these two items is designated on the report in Fig. 11 as the direct cost. There are, however, some charges in the General Expense figure, such as repairs of machinery, shipping wages, &c., which would be increased by the entrance of any new job into the shop. In a larger factory such charges might be analyzed and kept track of in a way to be charged directly against the lots which they affect. In this Hardware factory this would hardly be possible at present, and therefore an approximate solution of the problem has been reached by a simpler method.

The general wages are charged by the time keepers to a series of permanent lot numbers so as to effect the following classification:

1. SHIPPING.
2. SORTING AND MENDING.
3. TUMBLING.
4. TEAMING.
5. HANDLING STOCK.
6. REPAIRS TO MACHINERY—GENERAL.
7. REPAIRS TO DIES AND PUNCHES.
8. REPAIRS TO WIRE CHAIN MACHINES.
9. REPAIRS TO AUTOMATIC CHAIN MACHINES.
10. REPAIRS TO PATTERNS.
11. REPAIRS TO ELECTRIC LIGHTING.
12. REPAIRS TO BUILDINGS AND SPRINKLERS.
13. PIPING AND FITTING.
14. SUPERINTENDENCE.
15. OFFICE.
16. FOREMEN.
17. CARE OF ENGINE AND BOILER.
18. WATCHING AND JANITOR.
19. TIME KEEPING.
20. INVENTORY.
21. SAMPLES.
22. MISCELLANEOUS GENERAL WORK.

At the end of each year a complete analysis of General Wages, Operating Expenses and Maintenance of Plant

Hardware Dept. NOV 9. 1903

American 4½ ft. Halter Chains

216	Bg	4/0	2.21	2.64	477	36	570 24
440	"	3/0	1.96	2.35	862	40	1034 [illegible]
702	"	2/0	1.78	2.13	1249	56	1494 [illegible]
1613	"	0	1.57	1.88	2532	45	3033 [illegible]
684	"	1	1.39	1.67	950	76	1142 [illegible]
651	"	2	1.28	1.53	833	28	996 [illegible]
925	"	3	1.22	1.44	1128	50	1332 [illegible]
412	"	4	1.18	1.40	486	16	576 [illegible]
376	"	5	1.16	1.38	436	16	518 [illegible]
228	"	6	1.15	1.38	262	20	314 [illegible]
179	"	7	1.14	1.38	204	06	247 [illegible]
					9422	85	12258 [illegible]
							9422 85
							1836 74
			Gross Profit				16 37%
			Selling		7 87%		
			Cash Discount		2 07%		9 87%
			Net Profit				6 57%

Fig. 15.—Method of Figuring Costs on Complete Lines.

is drawn off, and the items are classified according as they are more or less closely allied to direct cost. Such an analysis is shown in Fig. 13. From the column of percentages, it appears that about 51 per cent. of the general expense is of such a nature as would be increased by taking on new jobs, while the remaining 49 per cent. would, within the limits of the shop's present capacity, continue practically unchanged. Taking into account the character of any proposed job—that is, whether it requires much or little power, repairs to machinery, &c., as compared with the average—it is possible to arrive at a fairly accurate idea of the outlay which would be absolutely necessitated by the presence of the job in the shop. The question of accepting or declining it can then be intelligently decided.

COST OF SELLING.

At the end of each year a statement of the cost of selling is drawn off from the Analysis Ledger, and the percentage on sales is computed. For the purpose of comparison, a card reproduced in Fig. 14 is used, showing the items for successive years arranged in parallel columns.

APPLICATION OF COSTS TO COMMERCIAL LINES.

In many factories, ours included, it is not sufficient to determine the profit or loss on each particular product, for the reason that the products of the factory are grouped in commercial lines which must be sold together. Sometimes a particular article will show a persistent loss, yet it cannot be thrown out, because it forms a part of a commercial line of goods which, as a whole, shows a satisfactory profit. To determine the profit or loss on the various lines of goods manufactured the form illustrated in Fig. 15 is used. The line taken for example is "American 4½-foot Halter Chains." These are made in sizes from 4/0 to 7, no one of which could be discontinued without crippling the line. The number of dozen sold in each size is obtained from a monthly analysis of sales and is extended at two rates, the first column containing the cost f.o.b. factory, obtained by averaging the cost reports, and the other containing the lowest selling price with freight allowance deducted. At the bottom of the sheet the selling expenses and cash discount are deducted from the gross profit, the difference being the percentage of net profit on the line taken as a whole. Of course it should be borne in mind that the percentage of profit arrived at by this method is the profit on one turnover of the capital involved, and in comparing different lines with one another the number of turnovers possible in a year should be taken into account. The sheets representing all the different lines are kept on a board filing clip, arranged in the order of profitableness. From time to time, as prices or costs change, new sheets are made out and the old ones are retired to a permanent set of transfer cases. These transfer cases gradually accumulate the individual history as to cost, price and profitableness of each line manufactured, while the filing clip represents a constantly up to date conspectus of the business as a whole, which is an important aid to the financial and commercial management.

THE THOMAS DISCOUNT BOOK.

MILLWARD T. THOMAS, Williamsport, Pa., has just published the Thomas Discount Book, furnishing discounts from 2½ to 90 per cent,, inclusive. A feature of the book to which special attention is called is the fact that the discounts given are those which are frequently used, no mention being made of those which are rarely or never employed, compactness of the work being thus secured. The author of the book refers to his years of experience in figuring discounts, and vouches for the absolute accuracy of the figures presented. The range of the discounts given is illustrated by those starting with discount 20 per cent., of which the following combinations are given: 20 per cent.; 20 and 2 per cent.; 20 and 2½ per cent.; 20 and 5 per cent.; 20, 5 and 2 per cent.; 20, 5 and 2½ per cent.; 20, 5 and 5 per cent.; 20, 5, 5 and 2½ per cent.; 20 and 7½ per cent.; 20, 7½ and 2 per cent.; 20, 7½ and 2½ per cent.; 20, 7½ and 5 per cent.; 20, 7½, 5 and 2½ per cent.; 20 and 10 per cent.; 20, 10 and 2 per cent.; 20, 10 and 2½ per cent.; 20, 10 and 5 per cent.; 20, 10, 5 and 2½ per cent.; 20, 10 and 7½ per cent.; 20, 10, 7½ and 2½ per cent.; 20, 10 and 10 per cent. The book is well printed on serviceable paper, and is equipped with a marginal index, facilitating quick reference to any discount desired. The price in cloth is $1, and in leather $1.25.

ANDREW FYRBERG ARMS COMPANY, Hopkinton, Mass., have been incorporated, under the laws of that State, for the purpose of manufacturing Firearms of every description. The officers of the company are Andrew Fyrberg, president; N. J. A. Fyrberg, vice-president, and F. A. Stephani, treasurer.

PRICE-LISTS, CIRCULARS, &c.

Manufacturers in Hardware and related lines are requested to send us duplicate copies of catalogues, price-lists, &c., one copy for our Catalogue Department in New York and another for our London office; and at the same time to call our attention to any new goods or additions to their line, of which appropriate mention will be made, besides the brief reference to the catalogue or price-list in this column.

MIDLAND IRON WORKS, Des Moines, Iowa: Illustrated catalogue of Wilbern Adjustable Door Hangers, Gravity Fire Door Equipment and Hardware specialties. They state that their Hangers are coming into extensive use on automatic fire proof doors, and that a number of the railroads are using them for freight house and shop doors.

CARTER WIRE FENCE MACHINE COMPANY, Mt. Sterling, Ohio: Circulars describing their machine, which is intended to weave the Fence in the field.

THE W. J. CLARK COMPANY, Salem, Ohio: Three pamphlets in the interest of their Quick as Wink improved Hose Couplers, one relating to a class or kind of the couplers made especially for users of compound air hose, another relating to such as are made for users of general purpose hose, and the third to such as are made specially for fire hose. The company state the demand for these couplers by users of compressed air is growing steadily with the increased use of compressed air for operating pneumatic tools.

THE STANDARD TOOL COMPANY, Cleveland, Ohio; New York office, 94 Reade street: Price-list of Spring Cotters and Flat Spring Keys, which went into effect March 1, 1904.

KINGERY MFG. COMPANY, Cincinnati, Ohio: Illustrated catalogue devoted to Crystal Flake for improving ice cream, ices, &c.; Ice Cream Freezers, Packing Cans, Ice Cream Cabinets, Ice Breakers, Shredders and Shavers; Dishers, Milk Shakes, Poppers and Roasters, &c.

THE W. S. TYLER COMPANY, Cleveland, Ohio: Price-list applying to the company's catalogue No. 21, including double crimped Wire Cloth and Screen, made from brass, copper, bronze, iron and steel wire, for all purposes; also ornamental Iron Work.

HELLER BROTHERS COMPANY, Newark, N. J.: Catalogue illustrating, with prices, Horse Rasps, Files, Farriers' Tools, Machinists' Hammers, Carriage Ironers' Hammers, Blacksmiths' Tongs, Sole Knives, Hardies, Punches, Blacksmiths' Hot and Cold Chisels, &c.

DAVIS & SIEHL, successors to the Davis Fencing Company, 3711-3715 Colerain avenue, Cincinnati, Ohio: Catalogue illustrating residence Fences, swinging and folding Gates, Fences for wall or coping, Porch Railings, Wire Lawn Fences, Oak Picket Fence, Spring Steel Fences, Fence and Hitching Posts, Post Tops, Hitching Weights, Tree Guards, Builders' Ironwork, Iron Window Guards, Iron Shutters, Jack Screws, Stable Fittings, Lawn Vases and Settees, wrought iron Jardiniere and Umbrella Stands, fancy iron Hanging Lamps, Grilles, Wire Flower Stands, Steel Folding Mats, Fire Escapes, &c.

S. W. CARD MFG. COMPANY, Mansfield, Mass.: Illustrated catalogue and price-list, devoted to Taps and Dies, Screw Plates, Die Stocks, Tap Wrenches, Die Holders, for use in lathe or turret of screw machines; Brace Bit Die Holders, Spring Screw Threading Dies and Clamp Collars, Center Reamers, Chasers for Screws, &c.

SARGENT & Co., New Haven, Conn., and 149-153 Leonard street, New York: Illustrated descriptive price-list of 120 large pages, relating to Screen Hardware and spring and summer goods for the season of 1904. The line shown is very comprehensive and completely indexed.

J. S. WOODHOUSE, 191 and 195 Water street, New York, manufacturer of and dealer in Agricultural Implements and Machines for the farm, field and garden: Illustrated catalogue L of 80 pages showing a large line of such goods, having six columns of index for quick reference.

FOREST CITY BIT & TOOL COMPANY, Rockford, Ill.: Illustrated catalogue F, devoted to hollow Mortising Chisels and Bits, common Mortising Chisels, Boring Machine

Bits, Machine Drills for wood, Brace Bits, Brace Drills for wood, nut and machine Augers. Attention is directed to the line of improved hollow Mortising Chisels and also to the line of Machine Bits suitable for use in car, wagon, plow and agricultural machinery shops.

BRILLIANT GAS LAMP COMPANY, 42 State street, Chicago, Ill.: Circulars illustrating the Brilliant, Halo Pressure and other Incandescent Gasoline Gas Lamps.

THE BENSKIN MFG. COMPANY, Canton, Ohio: Circulars illustrating and describing their Perfect Leather and Wood (obtuse angle) Fillets, White Metal and Brass Pattern Letters and Figures, Brass Dowels, &c.

EASTERN GRANITE ROOFING COMPANY, Irving Building, New York: Folder giving half-tone illustrations of some of the buildings which have been covered with the company's product. This roofing is made of a fibrous composition, practically fire proof and evenly covered with white pebbles of uniform size. Its durability and attractiveness are emphasized.

STANDARD GAS LAMP COMPANY, Chicago: Catalogue showing Indoor and Outdoor Arc Lamps, Improved Gravity Burner, One, Two, Three and Four Burner Pendant Lamps, Student, Wall and Street Lamps, &c.; also circulars relating to their new lighting systems.

CREAM CITY MFG. COMPANY, Milwaukee, Wis.: Catalogue devoted to Suit Case Locks, Satchel Frames, Suit Case Bolts, &c.

THE NATIONAL WIRE CORPORATION, New Haven, Conn.: Special price-list with tables of their extra double Galvanized Telegraph and Telephone Wire and Wire Strand. Accompanying the price-list is a circular setting forth the qualifications of these classes of Wire.

MISCELLANEOUS NOTES.

Twentieth Century Soot Destroyer.

The Chicago Chemical Company, 205 Augusta street, Chicago, are placing on the market a chemical composition or powder, known as the Twentieth Century soot destroyer. The manufacturers claim that by throwing a small quantity of this preparation on a fire in furnaces or stoves a gas is generated which attacks and destroys all soot in the stove or furnace, as well as in its smoke pipe and chimney. It is claimed that in this way at a cost of 10 or 15 cents and in a few minutes' time the whole heating system can be freed from its accumulation of soot, and that the chemical is in no way injurious to the metal of the heater or piping. They purpose selling this preparation through the hardware trade.

Nickel Plate Stove Polish Company.

The Nickel Plate Stove Polish Company, Chicago, have added to their long line of stove polishes, enamels, puttys and cements, Black Kid paste, a water proof turpentine polish, intended especially for use on sample stoves, also Russian asbestos cement, for mounting and packing joints in heaters, ranges and stoves. This cement is stated to be fire and acid proof, and the claim is made that it hardens quickly and adheres firmly to any surface. Russian stove putty is another of their new preparations. It is warranted by the manufacturers not to burn or crumble. The same company make what they call their Russian roofing cement, an elastic covering which they say will not freeze, melt or run and is non-inflammable.

Daisy Tie Yarn and Linen Finished Twines.

D. P. Winne Company, 338 Broadway, New York, who are large manufacturers and jobbers of twines, cordage and yarns of every description, are calling attention to several specialties. One of these is the Daisy tie yarn, a substitute for ordinary cotton twine, especially interesting now in view of the high price of raw cotton. This material, made of jute, specially prepared and treated, gives a yield of 3000 feet to the pound, and is wound in balls, cones and tubes. The company claim a saving of about 50 per cent., taking into account both price and increased yardage. Another important line is that of fancy linen finished twines put up in any shape desired; regularly in balls and tubes. This line is made especially for trade that requires fine twine. Any size required can be supplied, ranging in yarding from 10,000 feet down to 50 feet to the pound, and in any color or shade, there being several thousand different kinds, reckoning the various colors, sizes, lengths and styles of winding.

Peerless Iceland Freezer with Motor Attached

Dana & Co., Cincinnati, Ohio, are attaching motors to their 25 and 40 quart freezers, as shown in the accompanying illustration. The larger freezer has a motor of greater horse-power than the other, and weighs complete over 250 pounds more than the smaller one. The motor is attached directly to the stand of the freezer, is a direct current motor, 110 volts, 2-3 horse-power, 900 revolutions per minute, for the 25-quart, and 1 1-3 horse-power, 1125 revolutions per minute, for the 40-quart freezer. The company can also furnish this motor in 115, 125, 220, 230, 250 and 500 volts. It is furnished complete, with switchboard and starting box, idler and belt. The company can furnish a motor to order for alternating current, but the motor illustrated is for direct current only.

Peerless Iceland Freezer with Motor Attached.

The Wetherby lathe chuck is now being manufactured by the Hurwood Mfg. Company of Bridgeport, Conn., who have acquired the patent rights upon it. The screw is of steel, with an unusually long thread, which is flush with the body of the chuck, insuring the safety of the workman. The steel bushings are screwed into the body of the chuck, thus forming a solid steel bearing for the screws, which are fitted their entire length. The keys or wrenches fit into a socket of the screw. The jaws are of forged steel, and are easily reversible.

The Nicholls Mfg. Company, Ottumwa, Iowa, state that by means of the computations given on the sides of their Nicholls framing square a carpenter can do his own framing without figuring, among other things the following information being given: Length of any common rafter, 3 to 18 inches raise per foot; length of any hip or valley rafter; length of any jack rafter, spaced for 16 inches or 2 feet centers; side cut of hip or valley rafter; cut of cornice or plancher boards; sheathing in valley or hip and of all parts of roof. The square is made with a 1½ or 1¾ inch tongue, without weld and in a number of finishes. The same company also make what is known as the Nicholls Common Sense miter box.

Cupboard Turn No. 250.

The accompanying cuts relate to a cupboard turn offered by the Hardware Supply Company, Grand Rapids, Mich. The knob is cast brass of Colonial pattern, with

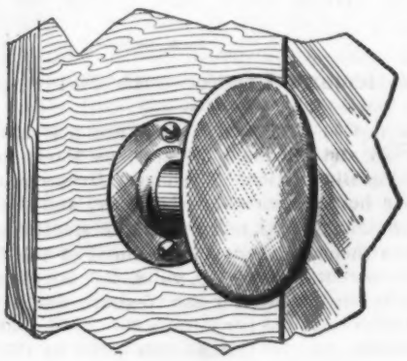


Fig. 1.—Cupboard Turn No. 250.

either a base as shown in Fig. 1, or a cast brass base of oblong pattern, as in Fig. 3. Knobs are furnished in any finish desired. The turn is easier to put on than a mortise turn, as with the one illustrated it is only necessary to bore a 5-16-inch hole through the door, ⅞ inch

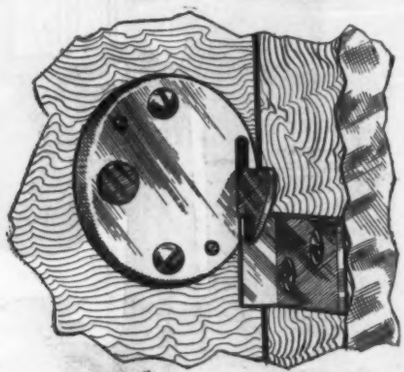


Fig. 2.—Inside View of No. 250 Turn.

from the edge, and screw the catch and knob base in place. It is referred to as presenting a neater appearance than a catch attached to the outside of a door, as the catch of the one described is out of sight on the inside, as

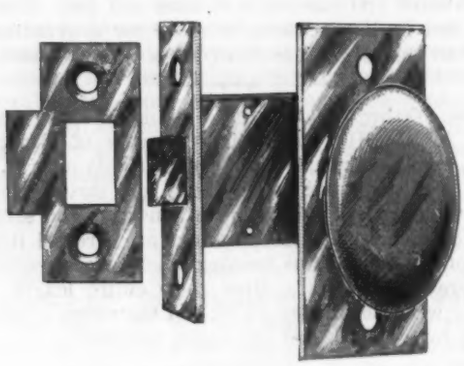


Fig. 3.—Mortise Cupboard Turn No. 707.

shown in Fig. 2. The turn can be used on either single or double doors. The company also make a mortise turn, as shown in Fig. 3.

Braxton Hardware Company, Sutton, W. Va., have been incorporated with a capital stock of $10,000, to conduct the wholesale and retail business in Shelf and Heavy Hardware, Stoves, Tinware, Paints, Sporting Goods, Agricultural Implements, &c.

Sportsman's Pocket Stone.

The Pike Mfg. Company, Pike, N. H., are now placing on the market the sportsman's pocket stone, 3 x 1¼ inches in size, shown herewith. This is a combination stone, one side of coarse corundum, which answers admirably as a sharpener for dull axes and knives, also

Sportsman's Pocket Stone.

as a file for filing any metal surface. The reverse side is a fine Washita similar to the company's Lily White brand, and is suitable for sharpening skinning knives, pocket knives or any wood working tools. With proper care in using it will, it is said, set a razor edge. Each stone is inclosed in a neat pasteboard box bearing the Pike trade-mark, which, it is remarked, guarantees it to be an article of exceptional merit.

Dixon's Rope Dressing.

Joseph Dixon Crucible Company, Jersey City, N. J., and 68 Reade street, New York, have just put on the market Dixon's handy graphite rope dressing for the easy dressing and preservation of elevating and transmission ropes and cables, the illustration indicating the cleanly method by which it is easily applied. It is in cake form, inclosed in a stout pasteboard container, the outer dimensions of which are 8½ x 6½ x 1½ inches

Dixon's Handy Graphite Rope Dressing.

and weighs about 3 pounds. When using it is only necessary to remove the paper covering from one edge, as marked, and hold the dressing material lengthwise against the rope while in motion, the best results being obtained by applying small quantities only at a time but frequently. This dressing is composed of pure Ticonderoga flake graphite from the Dixon mines, combined with suitable neutral fats and oils, giving the consistency of a stiff grease that will not melt or run off at the temperature of an engine room or shaft. It is of such a character that it insinuates itself between the wires, not only reducing friction where cables and transmission ropes run over sheaves, pulleys, drums, &c., but prolongs the life of the cable by preventing wires from rubbing against themselves where the wear cannot be seen.

Winsted Tool Set No. 999.

The Winsted Edge Tool Works, Winsted, Conn., are putting on the market the tool set shown herewith. It consists of a collection of eight tools, contained in a hardwood box, each tool held firmly in place by springs and catches. The set contains one each of the following

Winsted Tool Set No. 999.

tools: Razor blade drawing knife, 8-inch; handled butt chisel, 1½-inch; combination reamer and scratch awl, socket gouge, ¾ and 1 inch; socket firmer chisel, ½, ¾, 1¼ inch. The socket chisels and gouges are fitted with selected leather tipped handles made by the company. This set of tools is referred to by the manufacturers as somewhat different in assortment from combinations heretofore presented to the trade. It is stated that everything pertaining to the set is of the best quality and thoroughly practical for either tradesmen or house use.

Transcendent Lamps, Heaters and Stoves.

The Transcendent Lamp Company, 134-138 Mott street, New York, have put on the market a large line of Transcendent lamps, in portable styles for residences as well as systems for illuminating mills, factories, stores,

Fig. 1.—Transcendent Table Lamp.

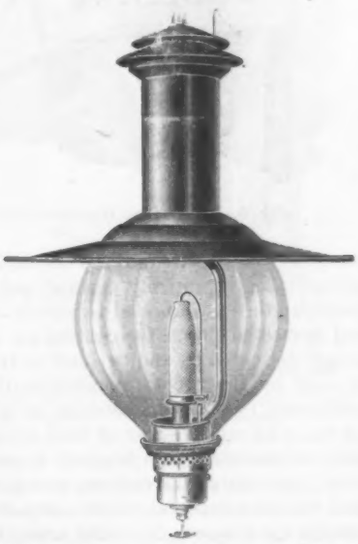


Fig. 2.—Arc Light for Interior or Exterior Use.

churches, halls, theaters, &c., which are shown in their illustrated catalogue devoted to this line, three types of which are here illustrated. The same principle is applied to a heater which both heats and lights, as shown in Fig. 3, other apparatus of kindred character operated on this principle being one, two and three burner stoves for cooking. Any of the peroleum products can be used as fuel, preferably kerosene. For illumination a fine brilliant incandescent light is produced of from 150 to 2000 candle-power, the kerosene being vaporized into gas, which gives a light of high illuminating power at a remarkably small operating cost, 1 gallon of kerosene in a 1200 candle-power lamp, lasting about 20 hours. Users of this system, whether in private or public buildings, can get the results produced by gas or electricity, and still be absolutely independent of lighting companies if available. This method of lighting, heating and cooking, we are advised, has been favorably passed on by the National Board of Fire Underwriters in Chicago, controlling nearly all the Western and Southern territory and similar boards in New York, Boston and Philadelphia, while insurance companies in France make a lower insurance rate to users of this system. Fig. 1 illustrates their No. 108 2-quart table lamp to stand, with small mantle, giving 150 to

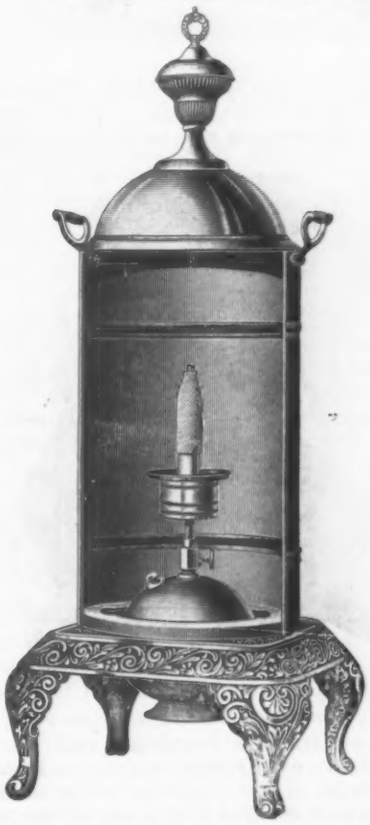


Fig. 3.—Combination Heater and Lamp.

200 candle-power, burning 1 pint of kerosene in from six to seven hours. The oil receptacles or founts are made of heavy gauge brass, polished and nickeled, and the burners of solid steel. The fount is partially filled with oil, and a bicycle pump coupled on to give the necessary pressure to force the oil to the burner where the heat vaporizes it into gas. The initial heat for starting a burner so that the oil is vaporized at the burner can be accomplished by means of a small torch made of asbestos dipped in wood alcohol, &c., or if ordinary illuminating gas is used in a building a small pipe is sometimes conducted so as to join the burner, this being simply a convenience in large systems. Where systems for large buildings are used requiring many lights, any number being available, a seamless drawn steel tank of requisite capacity is provided, together with a powerful pump, and the oil under pressure forced through piping to the burners to be vaporized, where the company say it combines with about 85 per cent. of oxygen from the atmosphere. Fig. 2 illustrates an arc light for outdoor or indoor use, so constructed as to be both wind and rain proof. It has an enameled hood and reflector, and can be supplied with either one or two incandescent mantles. Fig. 3 shows the combined heater and light, which gives 500 candle-power illumination, and consumes about 1 quart of oil in eight hours, the oil well having a capacity of 3 quarts. The lamp can be taken from the heater and used on a table if so desired.

Lead Burning Blow Pipe.

The double jet alcohol blow pipe manufactured by the Turner Brass Works, 64 North Franklin street, Chicago, is illustrated herewith. Like the oxy-hydrogen

Fig. 1.—Lead Burning Blow Pipe.

blow pipe, it produces an intensely hot nonoxidizing flame, and is easily adjusted from a needle point shown in Fig. 2 to its maximum size, as in Fig. 3, as desired.

Fig. 2.—Blow Pipe Adjusted to Needle Point.

In contrast to the oxy-hydrogen apparatus, however, the Turner double jet alcohol blow pipe No. 10 weighs about 1 pound, and is so compact that it can be carried in the

Fig. 3.—Blow Pipe Adjusted to Maximum Flame.

pocket, besides being extremely simple in construction. This blow pipe is recommended unreservedly by its makers for lead burning. It has the capacity for making joints in sheet lead for lead lined tanks, burning the lead terminals of the ordinary styles of lead storage batteries, and also the much heavier work of joining the lugs to the busbars in central station plants. For such heavy work, however, the manufacturers are designing a larger burner built upon the same principles as the appliance described and suited to the special requirements of professional lead burners. Besides being useful for lead burning this blow pipe is suited to many other purposes for which the oxy-hydrogen blow pipe is used, including laboratory and experimental work. The heat produced is stated to be over 3000 degrees F., and is more than is ordinarily required by jewelers and opticians for their work and sufficient to flow 25 per cent. gold solder. A continuous flame is maintained at all times without the

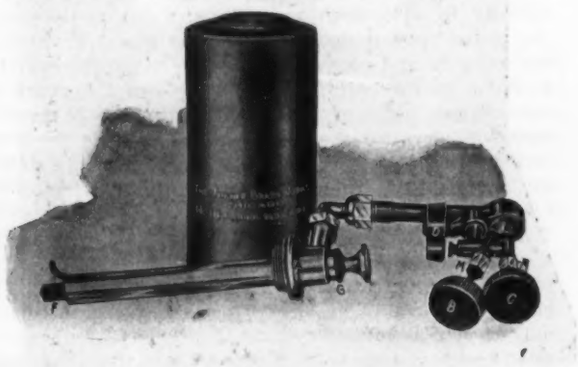


Fig. 4.—Method of Filling, and the Several Parts.

use of foot bellows, as the pressure is pumped into the reservoir and is sufficient to last several hours. The flame can be turned low like a lamp, and left burning inside the head for any length of time, consuming very little fuel and always ready for instant use by a turn of the needle valves. The operator can leave his work to wait on a customer, for example, without the necessity of relighting or regenerating the burner when he returns. The No. 10 blow pipe burns wood alcohol. The fuel is poured into the reservoir after removing the supply plug and burner, as shown in Fig. 4. These parts are then replaced, and a pressure pumped into the reservoir by means of the pump, C. The drip cup D is then filled with alcohol by opening the valve, B, and when full

Fig. 5.—Blow Pipe Heating Soldering Copper.

this valve is closed and the alcohol in the drip cup lighted. When entirely burned out valve B is again opened and a light applied to burner opening. Valve C is then opened to obtain the desired air blast. Both air and gas are delivered by the two jets to the combustion chamber, and by the proper regulation of the valves perfect combustion is secured, resulting in a nonoxidizing flame and the maximum degree of heat from the fuel. The capacity of the blow pipe is about ¾-pint, and it will burn at full blast three hours from one filling. The burner is fitted with a compound swivel, permitting the flame to be directed up or down, or swung around in any position desired. A convenient method for heating a soldering copper is shown in Fig. 5. The burner is constructed on the same general principle as the double jet gasoline torch burner made by the same firm, and is the result of several years' experience and careful experimenting with the view of obtaining a cheap and handy appliance for lead burning which should also be suited to fine brazing and soldering.

Compound Tire Pump and Pressure Register.

Brandenburg Bros. & Alliger, 103 Reade street, New York, and 85 Lake street, Chicago, are sole agents for two automobile specialties used jointly, but made by different concerns, as here illustrated. Figs. 1 and 2 represent the patented Turner-Kellogg double acting compound high pressure air pump, which is made by the Turner Brass Works, Franklin and Michigan streets, Chicago, and furnished both in polished brass and nickel plate. To get both volume and high pressure a large and small cylinder are used, mechanical means being employed to actuate the pistons in opposite directions. Letters B and C indicate the two piston racks, fitted with plungers inside of the large cylinder F and smaller cylinder E. The downward pressure on handle drives the piston rack B down, forcing the air at F through the valve H and compressing it into the small cylinder E, the pinion A carrying the rack piston C upward to the extreme hight of the small cylinder. The reverse action of elevating the handle of rack B fills the large cylinder through the valve at M, and the pinion A drives the rack piston C in the downward direction, forcing the compressed air at E out through the opening at valve G and into tire or tank through the hose and coupling at K. The operation of disengaging the rack in the small high pressure cylinder is accomplished by lifting the check at D, which makes the pump single acting, using only the large volume cylinder F. This procedure also allows both pistons to be depressed into their cylinders, in which position the entire length of pump is only 18 inches. In filling large tires—and the pump can be used

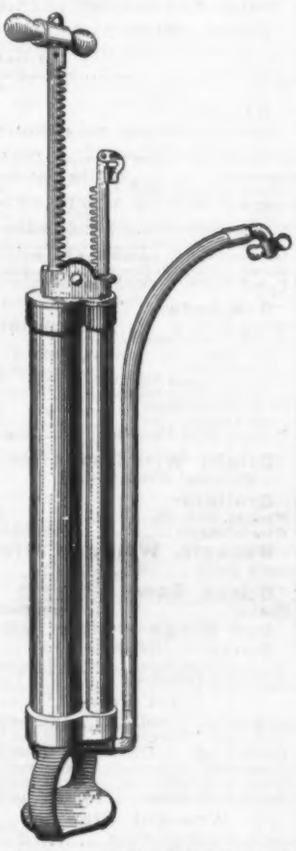


Fig. 1.—Double Acting Compound High Pressure Pump.

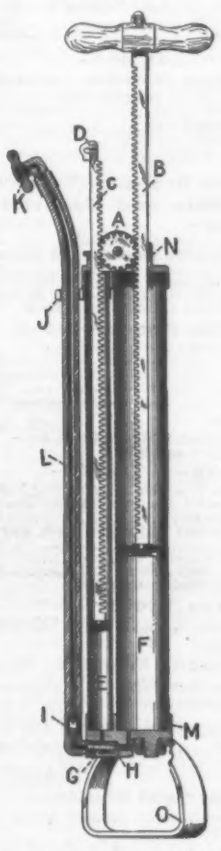


Fig. 2.—Sectional View of Pump.

for many other purposes—quick results are obtained by using the large cylinder separately, as single acting pump, until an interior is filled with uncompressed air, when the high pressure cylinder is quickly put in action by closing the check at D, when the plunger in the small cylinder easily forces compressed air into tire or tank. The pump is said to work as easily under a very high pressure as in the beginning, and is of such size and weight as can be conveniently carried in motor car or cycle, &c. The Ezy air coupling is used as shown at K, which is both simple and effective and can be furnished separately for any hose connection. With this pump the tires of an automobile weighing 2000 pounds and over can be inflated by merely connecting up and pumping, without first jacking up the car as customary. A valuable accessory to the pump is the National pressure register, made by the National Pump & Register Company, Rochester, N. Y., seen in Fig. 3, which can also be used for various other purposes. The construction of this gauge enables the autoist or motor cyclist to know exactly what pressure he has in the tires, instead of the pressure in a pump or tank, as such gauges have heretofore registered. Thus a chauffeur can always know definitely whether or

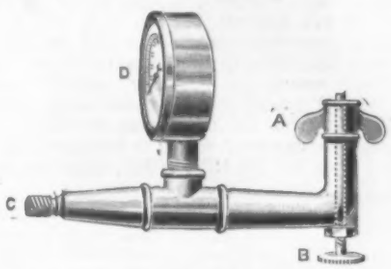
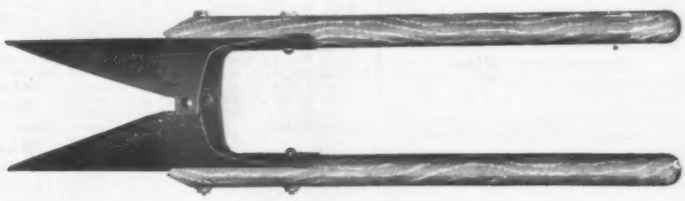


Fig. 3.—National Pressure Register.

not he has a uniform pressure in all the tires, avoiding the common danger of bursting them through ignorance of the pressure contained. With a uniform pressure in the four tires a proper foundation is provided for the vehicle, the working parts not being subjected to uneven and unnecessary strain by being out of alignment. The register, which records pressure up to 250 pounds per square inch, is coupled to the tires by means of the Ezy coupler at A, which will hereafter be a knurled instead of wing nut. The thumb pintle B is then screwed in just far enough to lift the tire valve off its seat and allow the air in tire to register in the pressure gauge D without any obstruction or valve between, and the valve in tire remains open while air is being forced in by connecting pressure pump to the valve stem at C. The existing pressure in any tire, at any time, may be ascertained by attaching this device and opening valve stem with the thumb pintle B without loss of pressure. The dial casing is 1⅝ x ⅞ inch, and the air chamber as now made 1¼ inches in diameter underneath the dial and tapering each way, the length of this intermediate portion being 1¾ inches in a total length of 3½ inches. The gauge is made of brass and nickel plated.

The Kohler Transplanter.

The transplanting tool shown in the accompanying cut is so constructed that when the handles are spread



The Kohler Transplanter.

the blades form a closed pocket, from which no earth can escape, no matter how sandy, so that all the soil about the roots is retained. The tool is provided with stops at the hinged joints, so that the handles cannot close beyond the vertical position shown in the illustration, avoiding all danger of injuring the tops of the plants. The tool measures, over all, 22½ inches, with the points of the blades 4¼ inches apart, and weighs 2½ pounds. The transplanter is manufactured by F. E. Kohler & Co., Canton, Ohio.

E. E. Schoening & Bro., 1213 Pine street, St. Louis, Mo., have disposed of their stock to the Schoening Hardware Company, who have been incorporated with a capital stock of $20,000, fully paid in. The officers of the company are E. E. Schoening, president; C. A. Schoening, vice-president, and W. L. Schoening, secretary and treasurer.

Current Hardware Prices.

REVISED APRIL 26, 1904

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer, are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33⅓@33⅓ & 10% signifies that the price of the goods in question ranges from 33⅓ per cent. discount to 33⅓ and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued June, 1903, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Abrasives—

Adamite in Carloads:
Crystal ... ℔ ton $90@100
Grain ... ℔ ton $120@140
See also *Emery*.

Adjusters, Blind—

Domestic, ℔ doz. $3.00 ... 33⅓%
North's ... 10%
Zimmerman's—See *Fasteners, Blind*.

Window Stop—

Ives' Patent ... 25%
Taplin's Perfection ... 25%

Ammunition—See *Caps, Cartridges, Shells, &c.*

Anvils—American—

Armand Hammer, Wrought ℔ lb 8½@8¾c
Buel Patent Trenton ... ℔ lb 9½@9¾c
Eagle Anvils ... ℔ lb 7¼@7¾c
Hay-Budden, Wrought ... 9@9¼c
Horseshoe brand, Wrought ... 9@9¼c

Imported—

Peter Wright & Sons ... ℔ lb 10½c

Anvil, Vise and Drill—

Millers Falls Co., $18.00 ... 15&10%

Apple Parers—See *Parers, Apple, &c.*

Aprons, Blacksmiths'—

Hull Bros. Co ... 30&5%
Livingston Nail Co ... 33⅓%

Augers and Bits—

Com. Double Spur ... 75@75&5%
Boring Machine Augers ... 66⅔@70%
Car Bits, 12-in. twist ... 60@60&10%
Jennings' Pattern ... 50&10&5@60%
Ford's Auger and Car Bits ... 40&5%
Forstner Pat. Auger Bits ... 25%
C. E. Jennings & Co.:
No. 10 ext. lip, R. Jennings' list 25&10%
No. 30, R. Jennings' List ... 40&7½&10%
Russell Jennings' ... 35&10&2½%
L'Hommedieu Car Bits ... 15&10%
Mayhew's Countersink Bits ... 45%
Millers' Falls ... 50&10&7½%
Pugh's Black ... 20%
Pugh's ennings' Pattern ... 35%
Snell's Auger Bits ... 60%
Snell's Bell Hangers' Bits ... 50&10%
Snell's Car Bits, 12-in. twist ... 60%
Wright's Jennings Bits (R. Jennings' list) ... 50%

Bit Stock Drills—

See *Drills, Twist*.

Expansive Bits—

Clark's small, $15; large, $26 ... 50&10%
Clark's Pattern, No. 1, ℔ doz., $26; No. 2, $18 ... 50&10%
Ford's, Clark's Pattern ... 50&10@60%
C. E. Jennings & Co., Steer's Pat. ... 25&10%
Swan's ... 60%

Gimlet Bits—

Common Double Cut .. gro. $3.00@3.25
German Pattern ... gro. $4.50@4.75

Hollow Augers—

Bonney Pattern, per doz. $10.00@11.00
Ames ... 25&10%
New Patent ... 25&10%
Universal ... 20%
Wood's Universal ... 25%

Ship Augers and Bits—

Ford's ... 40%
Snell's ... 40%
C. E. Jennings & Co.:
L'Hommedieu's ... 15&10%
Watrous' ... 23⅓&10%

Awl Hafts, See *Hafts, Awl*.

Awls—

Brad Awls:
Handled ... gro. $2.75@3.00
Unhandled, Shouldered .. gro. 63@66c
Unhandled, Patent ... gro. 66@70c
Peg Awls:
Unhandled, Patent ... gro. 51@54c
Unhandled, Shouldered .. gro. 65@70c
Scratch Awls:
Handled, Common .. gro. $3.50@4.00
Handled, Socket .. gro. $11.50@12.00
Hurwood ... 40%

Awl and Tool Sets—See *Sets, Awl and Tool*.

Axes—

First Quality ... $5.50@6.00
Second Quality ... $4.75@5.25

Axle Grease—See *Grease, Axle*

Axles—

Iron or Steel
Concord, Loose Collar ... 5@5½c
Concord, Solid Collar ... 5@5½c
No. 1 Common ... 4@4½c
No. 1½ Com. New Style ... 4½@5c
No. 2 Solid Collar ... 4¾@5¼c
Nos. 7, 8, 11 and 12 ... 60&5@60&10%
Nos. 13 to 14 ... 60@5@60&10%
Nos. 15 to 18 ... 60&10@70%
Nos. 19 to 22 ... 60&10@70%

Boxes, Axle—

Common and Concord, not turned .. lb. 4½@4½c
Common and Concord, turned ... lb. 5@5½c
Half Patent ... lb. 9@9½c

Bait—Fishing—

Heudryx:
A Bait ... 20%
B Bait ... 25%
Competitor Bait ... 20&5%

Balances—Sash—

Caldwell new list ... 50%
Pullman's ... 60%

Spring—

Spring Balances ... 60@60&5%
Chatillon's:
Light Spg. Balances ... 40&10%
Straight Balances ... 40%
Circular Balances ... 50%
Large Dial ... 30%
Peluze ... 50%

Barb Wire—See *Wire, Barb*.

Bars—Crow—

Steel Crowbars, 10 to 50 lb., per lb ... 3@3½c

Towel—

No. 10 Ideal, Nickel Plate ... ℔ gro, $8.50

Beams, Scale—

Scale Beams, List Jan. 12, '82 .. 40&10%
Chattillon's No. 1 ... 30%
Chattillon's No. 2 ... 40%

Beaters—Carpet—

Holt-Lyon Co.:
No. 12 Wire Coppered ℔ doz $0.85; Tinned ... $1.00
No. 11 Wire Coppered ℔ doz. $1.10; Tinned ... $1.20
No. 10 Wire Galvanized ... ℔ doz. $1.75
Western W. G. Co.
No. 1 Electric ... ℔ gro. $7.80
No. 2 Buffalo ... ℔ gro. $9.00
No. 3 Perfection Dust ... ℔ gro. $8.00

Egg—

Holt-Lyon Co.:
Holt, No. A, Japanned ... ℔ doz. $1.20
Holt, No 1, Tinned ... ℔ doz. $1.50
Holt, No. B, Japanned ... ℔ doz. $2.00
Holt, No. 2, Tinned ... ℔ doz. $2.25
Lyon, No 2, Japanned ... ℔ doz. $1.25
Lyon, No. 3, Japanned ... ℔ doz. $1.50
Lightning Chain, ℔ gro ... $15.00
National Mfg. Co.: ℔ gro.
No. 1 Dover, Family size ... $7.00
No. 2 Dover, Hotel size ... 14.00
Taplin Mfg. Co.: ℔ gro.
No. 60 Improved Dover ... $6.00
No. 75 Improved Dover ... 6.50
No. 100 Improved Dover ... 7.00
No. 102 Improved Dover, Tin d ... 8.50
No. 150 Improved Dover, Hotel ... 15.00
No. 152 Imp'd Dover, Hotel, T'd ... 17.00
No. 200 Imp'd Dover Tumbler ... 8.50
No. 202, Imp'd Dover Tumbler, Tin'd ... 9.50
No. 300, Imp'd Dover Mammoth, ℔ doz ... $25.00
Western, W. G. Co., Buffalo ... $7.00
Wonder (S. S. & Co.) ... ℔ gro. net, $6.00

Bellows—

Blacksmith, Standard List, .75@75&5%

Blacksmiths'—

Net Prices.

Inch..	*30*	*32*	*34*	*36*	*38*	*40*
Each	*$3.50*	*3.75*	*4.25*	*4.80*	*5.35*	*6.15*

Extra Length:
Each .. $4.00 4.55 5.10 5.60 6.40 7.50

Molders—

Inch	10	12	14
Doz	$9.50	10.00	13.00

Hand—

Inch	6	7	8	9	10
Doz	$4.25	4.50	5.00	6.50	7.75

Bells—Cow—

Ordinary goods ... 75&5@75&10%
High grade ... 70&10@70&10&5%
Jersey ... 75&10%
Texas Star ... 50%

Door—

Abbe's Gong ... 45%
Barton Gong ... 55%
Home, R. & E. Mfg. Co.'s ... 55&10%
Lever and Pull, Sargent's ... 60&10&10%
Yankee Gong ... 55%

Hand—

Hand Bells, Polished, Brass ... 60& @60&10%
White Metal ... 60%
Nickel Plated ... 50@5&5%
Swiss ... 60@60&7½%
Cone's Globe Hand Bells ... 33⅓@33⅓&10%
Silver Chime ... 33⅓@33⅓&10%

Miscellaneous—

Farm Bells ... lb. 2@2¼
Steel Alloy Church and School ... 60@60&5%
American Tube & Stamp'g Co. Gongs ... 75%
Table Call Bells ... 50&5&10%
Trip Gong Bells ... 55&10@60%

Belting—Rubber—

Agricultural (Low Grade) .. 75@75&5%
Common Standard ... 70@70&10%
Standard ... 65@70%
Extra ... 60&5@60&10%
High Grade ... 50&5@50&10%
Boston Belting Co.:
Seamless Stitched Imperial ... 45&5%
Boston ... 50&5%
Niagara ... 60&5%

Leather—

Extra Heavy, Short Lap ... 60@60&5%
Regular Short Lap 60&10@60&10&10%
Standard ... 70@70&5%
Light Standard ... 70&10%
Cut Leather Lacing ... 60&10%
Leather Lacing Sides, per sq. ft .. 18c

Bench Stops—See *Stops, Bench*

Benders and Upsetters, Tire—

Detroit Perfected Tire Bender ... 40%
Green River Tire Benders and Upsetters ... 30%
Detroit Stoddard's Lightning Tire Upsetters, No. 1, $4.35; No. 2, $7.25; No. 3, $10.50; No. 4, $16.25; No. 5, $20.50.

Bicycle Goods—

John S. Leng's Son's 1902 list:
Chain ... 50%
Parts ... 50%
Spokes ... 50%
Tubes ... 60%

Bits—

Auger, Gimlet, Bit Stock Drills, &c.—See *Augers and Bits*.

Blocks—Tackle—

Common Wooden ... 70&10@75&5%
Hollow Steel Blocks, with Ford's Patent Sheaves ... 50&10%
Lane's Patent Automatic Lock and Junior ... 30%
Stowell's Novelty, Mal. Iron ... 50&10%
Stowell's Self Loading ... 60%
See also *Machines, Hoisting*.

Boards, Stove—

Zinc, Crystal, &c ... 30&10@40&5%

Bolts—Carriage, Machine, &c.—

Common Carriage ... 75@ ... %
Phila. Eagle, $3.00 list May 24, '99 ... 80@80&10%
Boll Ends, list Feb. 14, '95 ... 75@ ... %
Machine ... 75@75&5%
Machine with C. & T. Nuts ... 70&5@ ... %

Door and Shutter—

Cast Iron Barrel, Round Brass Knob:

Inch	*3*	*4*	*5*	*6*	*8*
Per doz	*$0.26*	*.30*	*.39*	*.47*	*.65*

Cast Iron Spring Foot:

Inch	*6*	*8*	*10*
Per doz	*$1.00*	*1.25*	*1.75*

Cast Iron Chain, Flat, Japanned:

Inch	*6*	*8*	*10*
Per doz	*$0.75*	*1.05*	*1.30*

Cast Iron Shutter, Brass Knobs:

Inch	*6*	*8*	*10*
Per doz	*$0.57*	*.80*	*1.00*

Wrt Barrel, Jap'd .. 75&10@75&10&10%
Wrought " Bronzed .. 50&5@50&10%
Wrought Flush, B. K .. 50&10@60&10%
Wrought Shutter .. 50&10&10@60&5%
Wrought Square Neck ... 50@50&10%
Wrought Sunk, Flush ... 50@50&10%
Ives' Patent Door ... 60%

Stove and Plow—

Plow ... 65&10@ ... %
Stove ... 30&5@30&10&5%

Tire—

Common ... 72½@72½&10%
Norway Iron ... 80@80&10%

American Screw Company:

Norway Phila., list Oct. 16, '84 ... 80%
Eagle Phila., list Oct. 16, '84 ... 82½%
Bay State, list Dec. 28, '99 ... 72½%

Franklin Moore Co.:

Norway Phila., list Oct. 16, '84 ... 80%
Eagle Phila., list Oct. 16, '84 ... 82½%
Eclipse, list Dec. 28, '99 ... 72½%
Russell, Burdsall & Ward Bolt & Nut Co.
Empire, list Dec. 28, '99 ... 72½%
Norway Phila., list Oct. '84 ... 80%
Upson Nut Co.:
Tire Bolts ... 72½%

Borers, Tap—

Borers Tap, Ring, with Handle:

Inch	*1¼*	*1½*	*1¾*	*2*
Per doz	*$4.30*	*5.00*	*5.75*	*7.25*
Inch			*2¼*	*2½*
Per Doz			*$8.65*	*11.50*

Enterprise Mfg. Co., No. 1, $1.25; No. 2, $1.65; No. 3, $2.50 each ... 25%

Boxes, Mitre—

C. E. Jennings & Co ... 25&10%
Langdon ... 15&10%
Perfection ... ℔ doz. $36 00
Schatz ... 40%

Braces—

NOTE.—*Most Braces are sold at net prices.*
Common Ball, American .. $1.15@1.25
Barber's ... 50&10&10@60&10%
Fray's Genuine Spofford s ... 60%
Fray's No. 70 to 120, 81 to 133, 207 to 414 ... 60%
C. E. Jennings & Co ... 50&5&10%
Mayhew's Ratchet ... 60%
Mayhew's Quick Action Hay Patent .. 50%
Millers Falls Drill Braces ... 25&10%
P. S. & W. Co. Peck's Patent 60&10@65%

Brackets—

Wrought Steel ... 80@80&10%
Bradley's Wire Shelf:
Full cases ... 80&10&10%
Broken cases ... 80&10%
Griffin's Pressed Steel ... 80%
Griffin's Folding Brackets ... 70&10%
Stowell's Cast Shelf ... 75%
Stowell's Sink ... 50%
Western, W. G. Co., Wire ... 60&10%

Bright Wire Goods—See *Wire and Wire Goods*.

Broilers—

Western, W. G. Co ... 80%
Wire Goods Co ... 75@75&10%

Buckets, Well and Fire—See *Pails*

Bucks, Saw—

Hoosier ... ℔ gro. $36.00

Bull Rings—See *Rings, Bull*.

Butts—Brass—

Wrought list Sept., '96 ... 20@30%
Cast Brass, Tiebout's ... 50%

Cast Iron—

Fast Joint, Broad ... 50@50&10%
Fast Joint, Narrow ... 50@50&10%
Loose Joint ... 70&5@70&10%
Loose Pin ... 70&5@70&10%
Mayer's Hinges ... 70&5@70&10%
Parliament Butts ... 70&5@70&10%

Wrought Steel—

Table and Back Flaps ... 75%
Narrow and Broad ... 75%
Inside Blind ... 75&10%
Loose Pin ... 75%
Loose Pin, Ball and Steeple Tip ... 80&20%
Japanned, Ball Tip Butts, 70&10%
Bronzed Wrt, Nar. and Inside Blind Butts ... 55&10%

Extra 10@10&10%

Cages, Bird—

Hendryx, Brass:
3000, 5000, 1100 series ... 5%
1200 series ... 33⅓%
300, 300, 600 and 900 series ... 40&10%
Hendryx Bronze:
700, 800 series ... 40&10%
Hendryx Enameled ... 40&10%

Calipers—See *Compasses*.

Calks, Toe and Heel—

Blunt, 1 prong ... per lb .. 4@4½c
Sharp, 1 prong ... per lb. 4¼@4¾c
Perkins' Blunt Toe ... cents, ℔ lb .35
Perkins' Sharp Toe ... cents, ℔ lb .45

Can Openers—See *Openers, Can*

Cans, Milk—

	5	8	10 gal.	
Illinois Pattern.	1 50	2.00	2.25	each.
Iowa Pattern...	....	2.35	2.50	each.
	20	30	40	qts.
New York Patt'rn	1.65	2.40	2.75	each.
Baltimore Patt'rn	....	1.80	2.00	each.

Cans, Oil—

Buffalo Family Oil Cans:

3	5	10 gal.
$48.00	64.20	129.60 gro., net

Caps—Percussion—

Eley's E. B......60c
G. D......*per M* 34@35c
F. L......*per M* 40@45c
G. E......*per M* 54@55c
Musket.....*per M* 62@63c

Primers—

Berdan Primers, $2.00 per M...20&5%
B. L. Caps (Sturtevant Shells) $2.00 per M.....20%
All other primers per M.$1.53@$1.60

Cartridges—

Blank Cartridges:
32 C. F., $5.50.....10&5%
38 C. F., $7.00.....10&5%
22 cal. Rim, $1.50.....10&5%
32 cal. Rim, $2.75.....10&5%
B. B. Caps, Con., Ball Swgd.....$1.90
B. B. Caps, Round Ball.....$1.40
Central Fire.....25%
Target and Sporting Rifle.....15&5%
Primed Shells and Bullets.....15&10%
Rim Fire Sporting.....50%
Rim Fire, Military.....15&5%

Cases, Show—

Sun, No. 102, Silent Salesman, 6 ft., $25.00

Casters—

Bed.....70@70&10%
Plate.....60&5@60&10%
Philadelphia.....75@75&5%
Boss.....70&10%
Boss Anti-Friction.....70&10%
Gem (Roller Bearing).....75&5%
Martin's Patent (Phœnix).....45%
Smith & Hemenway Co.....33⅓%
Standard Ball Bearing.....45%
Tucker's Patent low list.....30%
Yale (Double Wheel) low list.....45%

Cattle Leaders—

See *Leaders, Cattle.*

Chain, Coil—

American Coil, Jobbers' Shipments:

3-16	*¼*	*5-16*	*⅜*	*7-16*	*½*	*9-16*
8.00	*5.30*	*4.15*	*3.75*	*3.60*	*3.50*	*3.45*
⅝	*¾*	*⅞*	*1 to 1¼ inch.*			
3.35	*3.25*	*3.50*	*3.15*	*per 100 lb.*		

German Coil.....60&10c@10%

Halters and Ties—

Halter Chains.....60c@60&10c@10%
German Pattern Halter Chains, list July 24, '97.....60&10&10@.....%
Cow Ties.....60@60&10%

Trace, Wagon, &c.—

Traces, Western Standard: 100 pair
6½—6-3, Straight, with ring...$24.00
6½—6-2, Straight, with ring...$24.50
6½—8-2, Straight, with ring...$28.00
6½—10-2, Straight, with ring...$33.00
Add 2¢ per pair for Hooks.
Twist Traces 2¢ per pair higher than Straight Link.
Trace, Wagon and Fancy Chains..60&5@60&10&5%

Miscellaneous—

Jack Chain, list July 10, '93:
Iron.....70@70c&5%
Brass.....70@70c&5%
Safety Chain.....75@75&10c&5%
Gal. Pump Chain.....*lb* 4¼@4¾c
Covert Mfg. Co.
Breast.....40&2%
Halter.....40&2%
Heel.....40&2%
Rein.....40&2%
Stallion.....40&2%
Covert Sad. Works:
Breast.....70%
Halter.....70%
Cold Back.....70%
Rein.....70%
Oneida Community:
Am. Coil and Halters.....40@40&5%
Am. Cow Ties.....45@50%
Eureka Coil and Halter.....45@50&5%
Niagara Coil and Halters.....45@50&5%
Niagara Cow Ties.....45&5@50&10&5%
Niagara Wire Dog Chains...45@50&5%
Wire Goods Co.:
Dog Chain.....70&10%
Universal Dbl-Jointed Chain.....50%

Chalk—(From Jobbers.)

Carpenters' Blue.....gro. 40c
Carpenters', Red.....gro. 35c
Carpenters', White.....gro. 30c
See also Crayons.

Checks, Door—

Bardsley's.....45%
Columbia.....50&10%
Eclipse.....60&10%

Chests, Tool—

American Tool Chest Co.:
Boys' Chests, with Tools.....55%
Youths' Chests, with Tools.....40%
Gentlemens' Chests, with Tools.....30%
Farmers', Carpenters', etc., Chests, with Tools.....20%
Machinists' and Pipe Fitters' Chests, Empty.....50%
C. E. Jennings & Co.'s Machinists' Tool Chests.....33⅓&10%

Chisels—

Socket Framing and Firmer

Standard List.....70@70&10%
Buck Bros.....30%
Charles Buck.....30%
C. E. Jennings & Co. Socket Firmer No. 10.....60&10%
C. E. Jennings & Co. Socket Framing No. 15.....60&10%
Swan's.....70%
L. & I. J. White.....30@30&5%

Tanged—

Tanged Firmers.....40c&5@40&10%
Buck Bros.....30%
Charles Buck.....30%
C. E. Jennings & Co. Nos. 191, 181.....16⅔&10%
L. & I. J. White, Tanged.....25&5%

Cold—

Cold Chisels, good quality.lb. 13@15c
Cold Chisels, fair quality..lb. 11@12c
Cold Chisels, ordinary.....*lb.* 9 @10c

Chucks—

Beach Pat., each $8.00.....35&5%
Pratt's Positive Drive.....25%
Empire.....25%
Blacksmiths'.....25%
Skinner Patent Chucks:
Combination Lathe Chucks.....40%
Drill Chucks, Patent and Standard..30%
Drill Chucks, New Model.....20%
Independent Lathe Chucks.....40%
Improved Planer Chucks.....25%
Universal Lathe Chucks.....40%
Face Plate Jaws.....40%
Standard Tool Co.:
Improved Drill Chuck.....45%
Union Mfg. Co.:
Combination.....50%
Czar Drill.....35%
Combination Geared Scroll.....40%
Geared Scroll.....40%
Independent.....50%
Independent Steel.....40%
Union Drill.....45%
Universal.....50%
Independent Iron Face Plate Jaws..40%
Independent Steel Face Plate Jaws..40%
Westcott Patent Chucks:
Lathe Chucks.....50%
Little Giant Auxiliary Drill.....45%
Little Giant Double Grip Drill.....45%
Little Giant Drill, Improved.....45%
Oneida Drill.....45%
Scroll Combination Lathe.....45%

Clamps—

Adjustable, Hammers'.....20@20&5%
Cabinet, Sargent's.....50&10%
Carriage Makers', P., S. & W. Co......50%
Carriage Makers' Sargent's.....60%
Bessey Parallel.....33⅓&10%
Linemans' Utica Drop Forge & Tool Co40%
Saw Clamps, see *Vises, Saw Filers'.*

Cleaners, Drain—

Iwan's Champion, Adjustable.....55%
Iwan's Champion, Stationary.....40%

Sidewalk—

Star Socket, All Steel.....℔ doz. $4.05 net
Star Shank, All Steel.....℔ doz. $3.24 net
W. & C. Shank, All steel, ℔ doz., 7½ in., $3.00; 8 in., $3.25.

Cleavers, Butchers'—

Foster Bros.....30%
New Haven Edge Tool Co.'s.....45%
Fayette R. Plumb.....33⅓@33⅓&10%
L. & I. J. White.....30%

Clippers—

Chicago Flexible Shaft Company
'98 Chicago Horse.....$8.75 } 15%
1902 Chicago Horse.....$10.75 }
20th Century Horse, each, $5.00.....30%
Lightning Belt.....$15.00 } 15%
Chicago Belt.....$20.00 }
Stewart's Patent Sheep.....$18.50 }

Finger Nail Clippers—

Smith & Hemenway Co..... doz. net $2.00

Clips, Axle—

Eagle and Superior ¼ and 5-16 inch.....70@10%
Norway, ¼ and 5-16 inch..70@70&10%

Cloth and Netting, Wire

—See Wire, &c.

Cocks, Brass—

Hardware list:
Compression, Plain Bibbs, Globe, Kerosene, Racking, &c.. Cocks. 70@10@75%

Coffee Mills—See *Mills, Coffee.*

Collars, Dog—

Brass, Walter B. Stevens & Son's list.40%
Embossed, Gilt, Walter B. Stevens & Son's list.....30&10%
Leather, Walter B. Stevens & Son's list40%

Combs, Curry—

Metal Stamping Co.....20&10%

Mane and Tail—

Covert's Saddlery Works.....60&10%

Compasses, Dividers, &c.

Ordinary Goods.....75&5@75&10%
Bemis & Call Hdw. & Tool Co.:
Dividers.....65%
Calipers, Double.....65%
Calipers, Inside or Outside.....65%
Calipers, Wing.....60%
Compasses.....50%

Compressors, Corn Shock—

J. B. Hughes' ℔ doz.....$2.50

Conductor Pipe, Calva —

L. C. L. to Dealers:

Territory.	*Nested.*	*Not nested.*
A. Eastern.	*75&7½%*	*75&2½%*
B. Eastern	*75&10&5%*	*75&7½%*
Central.....	*75&7½%*	*75%*
Southern ..	*70&10%*	*70&5%*
S. Western..	*70&7½%*	*70&2½%*

Terms, 60 days, 2% cash, 10 days. Factory shipments generally delivered.
See also *Eave Troughs.*

Coolers, Water—

Gal. each.	½	3	4	6	8
Labrador	$1.20	$1.50	$1.80	$2.10	2.70
Gal.	3	4	6	8	
Iceland, ea.	$1.80	$2.10	2.40	$3.00	
Gal.	2	3	4	6	8
Galv. Lined Ea.	$1.85	$2.00	$2.2	$2.90	$3.90

25%

Ga.v. Lined side handles

Gal.	2	3	4	6	8
Each.	$1.95	$2.15	$2.40	$3.30	$4.15..25%

Coopers' Tools—

See *Tools, Coopers'.*

Cord—Sash—

Braided, Drab.....*lb.* 35c
Braided, White, Com.....*lb.* 25@25c
Cable Laid Italian...*lb. A,* 15c; *B,* 16c
Common India.....*lb.* 10@10½c
Cotton Sash Cord, Twisted....20@25c
Patent Russia.....*lb.* ..@15c
Cable Laid Russia.....*lb.* ..@15c
India Hemp, Braided.....*lb* ..@18c
India Hemp, Twisted.....*lb.* 12@13c
Patent India, Twisted.....*lb.*13@13c
Anniston Cordage Co.: Braided Cotton.
Old Glory, Nos. 7 to 12.....℔ lb 30 ¢
Anniston, Nos. 7 to 12.....℔ lb 25 ¢
Old Colony, Nos. 7 to 12.....℔ lb 25 ¢
Anniston Drab, Nos. 7 to 12...℔ lb 30 ¢
Pearl Braided, cotton, No. 6℔ lb, 24¢; Nos. 7 to 12 23¢.
Eddystone Braided Cotton, No. 6℔ lb 27¢
Harmony Cable Laid Italian, No. 7 to 10.....℔ lb33
Peerless:
Cable Laid Italian.....10¢
Cable Laid Russian.....14¢
Cable Laid India.....12¢
Braided India.....18¢
Samson, Nos. 7 to 12:
Braided, Drab Cotton.....℔ lb 36½¢
Braided, Italian Hemp.....℔ lb 46¢
Braided, Linen.....℔ lb 53¢
Braided, White Cotton or Spot.℔ lb 43¢
Massachusetts, White.....℔ lb 28 ¢
Massachusetts, Drab.....℔ lb 32 ¢
Phœnix, White, No's 7 to 12.....24¢
No. 6 cords, 1¢ extra.
Silver Lake:
A quality, Drab.....40¢
A quality, White.....35¢
B quality, Drab.....35¢
B quality, White.....30¢
Italian Hemp.....40¢
Linen.....57½¢

Wire, Picture—

List Oct., '00.....85¢10@35¢10¢10¢5%

Cradles—

Grain.....40¢12½%

Crayons—

White Round Crayons, gross.5½@6c Cases, 100 gro., $4.00, at factory.
D. M. Steward Mfg. Co.
Jumbo Crayons.....gr. $3.50 } Case lots 20%
Metal Workers' Crayons.gr. $2.50 }
Soapstone Pencils, round, flat or square.....gr.$1.50 }
Rolling Mill Crayons.....gr. $2.50 }
Railroad Crayons (composition) gr. $2.00 }
Zelnicker's Lumber:
Red, Blue, Green.....℔ gro. $6.50
Black.....℔ gro. $4.00
See also *Chalk.*

Crooks, Shepherds'—

Fort Madison, Heavy.....℔ doz. $7.00
Fort Madison, Light.....℔ doz. $6.50

Crow Bars—See *Bars, Crow.*

Cultivators—

Victor Garden.....50%

Cutlery, Table—

International Silver Company:
No. 12 Medium Knives, 1847..℔ doz. $3.50
Star, Eagle, Rogers & Hamilton and Anchor.....℔ doz. $3.00
Wm. Rogers & Son.....℔ doz. $2.50
Simeon L. & Geo. H. Rogers Company:
12 dwt. Medium Knives.....℔doz. $3.00
No. 77 Medium Knives.....℔ doz. $2.50

Cutters—Glass—

H. H. Mayhew Co.....40%
Red Devil.....50%
Smith & Hemenway Co.....50%
Woodward.....40%

Meat and Food—

American.....30%

Nos.	1	2	3	4	B	5
Each	$5	$7	$10	$25	$50	$60

Enterprise.....25@25&7½%

Nos.	5	10	12	22	32
Each	$2	$3	$2.75	$4.50	$6

Dixon's, ℔ doz.....30&10@40%

Nos.	1	2	3	4
	$14.00	$17.00	$19.00	$30.00

Ideal.....30&10@50%
Little Giant, ℔ doz.....33⅓@40%

Nos.	305	310	312	390	322
	$35.00	$48.00	$44.00	$73.00	$68.00

N. E. Food Choppers.....40%
New Triumph No. 605, ℔ doz. $24.00..
30&10@40%
Russwin Food No. 1, $24.00; No. 2, $27.00
45&10&10%
Sterling.....40@10&1 %
No 1....$2.00 each No. 2.. $2.50 each
Woodruff's, ℔ doz.....30&10@40%

Nos.	100	150
	$15.00	$18.00

Enterprise Beef Shavers.....25@30%

Slaw and Kraut—

Henry Disston & Sons:
Slaw, Corn Grater, &c.....40%
Kraut Cutters 24 x 7, 26 x 8, 30 x 9..55%
Kraut Cutters 36 x 12, 40 x 12.....40%
J. M. Mast Mfg. Co.:
Slaw Cutters, 1 Knife.....℔ doz. $3.00
Combined Slaw Cutter and Corn Grater.....℔ doz. $4.00
Sterling, $6.00 each.....33⅓%
Tucker & Dorsey Mfg. Co.:
Kraut Cutters.....40%
Slaw Cutters, 1 Knife, ℔ gr...$18@$20
Slaw Cutters, 2 Knife, ℔ gr...$22@$36

Tobacco—

All Iron, Cheap.....*doz. $4.25@$4.50*
Enterprise.....25@50%
National, ℔ doz. No. 1, $21; No. 2, $18..40%
Sargent's, ℔ doz. No. 2.....60%
Sargent's No 1 and 21.....50&10%

Washer—

Appleton's, ℔ doz. $16.00.....50&10&10%
Bonney's.....33⅓%

Diggers, Post Hole, &c.—

Dalbey Post Hole Auger...per doz., $9.00
Iwan's Improved Post Hole Auger.40&5%
Iwan's Vaughan Pattern Post Hole Augers, ℔ doz.....$6.50
Iwan's Perfection Post Hole Digger... ℔ doz. $8.50
Iwan's Split Handle Post Hole Diggers, ℔ doz.....$7.50
Kohler's Universal.....℔ doz, $15.00
Kohler's Little Giant.....℔ doz, $12.65
Kohler's Hercules.....℔ doz, $10.00
Kohler's Invincible.....℔ doz. $9 60
Kohler's Rival.....℔ doz. $8.55
Kohler's Pioneer.....℔ doz. $7.50
Never-Break Post Hole Diggers, ℔ doz. $24.00.....60%
Samson, ℔ doz. $34.00.....25%

Dividers—See *Compasses.*

Doors Screen—

Phillips', style E, ¾ in.....℔ doz, $10.50
Phillips', style 077, ⅞ in.....℔ doz, $8.00
Phillips', style x-y, ⅞ in.....℔ doz, $11.00
Porter's Plain, No. 6.....℔ doz. $6 75
Porter's Ornamental, No. 70.℔ doz. $10.50
Porter's No. 99.....$9.00
Porter's No. 44.....$10.75

Drawers, Money—

Sun Money Drawers, No. 5, ℔ doz. $9.50; No. 6, with Bell, $10.40; No. 6, with Gong, $10.50.
Tucker's Pat. Alarm Till No. 1, ℔ doz. $18; No. 2, $15; No. 3, $12; No. 4, $18

Drawing Knives—

See *Knives, Drawing.*

Drills and Drill Stocks—

Common Blacksmiths' Drill..each $1.50@$1.75
Breast, Millers Falls.....15&10%
Breast, P., S. & W.....40&5%
Goodell Automatic Drills..40&5@40&10%
Johnson's Automatic Drills Nos. 2 and 3.....16⅔&10%
Johnson's Drill Points.....16⅔&5&10%
Millers Falls Automatic Drills...33⅓&10%
Ratchet, Curtis & Curtis.....25%
Ratchet, Parker's.....40%
Ratchet, Weston's.....33⅓%
Ratchet, Whitney's, P. S. & W.....50%
Whitney's Hand Drill, No. 1, $10.00; Adjustable, No. 10, $12.00.....33⅓%

Twist Drills—

Bit Stock.....6¢10@60¢10¢10%
Taper and Straight Shank.....60¢10@60¢10¢5%

Drivers, Screw—

Screw Driver Bits..per doz. ..45@75c
Baisey's Screw Holder and Driver, ℔ doz. 2½-inch, $6; 4-in., $7.50 6-in., $9..40%
Buck Bros' Screw Driver Bits.....30%
Champion.....50%
Edson.....60%
Fray's Hol. H'dle Sets, No. 3, $12.00 50%
Gay's Double Action Ratchet.....35%
Goodell's Auto50&10&10@50&10&10&5%
Hurwood.....40%
Mayhew's Black Handle.....40%
Mayhew's Monarch.....40&10%
Millers Falls, Nos. 20 and 21.....25&10%
Millers Falls, Nos. 11, 12, 41, 42.....15&10%
Never Turn.....60%
New England Specialty Co.....50%
Sargent & Co.'s:
Nos. 1 and 60.....30&10&10%
Nos. 50 and 55.....60&10%
Nos. 20 and 40.....70&10%
Smith & Hemenway Co.....40&5%
H. D. Smith & Co's, Perfect Handle...40%
Stanley's R. & L. Co.'s:
No. 64, Varnished Handles10@60&10&10%
No. 86.....70@70&10&10%
Swan's:
Nos. 65 to 68.....50%
No. 40.....40&10%
Nos. 25, 35 and 45.....20&10&10%

Eave Trough, Galvanized

Territory.	*L. C. L.*
A. Eastern.....	*80¢10%*
B. Eastern.....	*80¢10¢5%*
Central.....	*80¢10%*
Southern.....	*75¢10&5%*
S. Western.....	*75¢10¢5%*

Terms, 2% for cash. Factory shipments generally delivered.
See also *Conductor Pipe and Elbows.*

Elbows and Shoes—

Factory shipments.....60%
Perfect Elbows (S. S. & Co.)..... .....30%

Emery, Turkish—

	4 to 5	*5 to 150*	*Flour*
Kegs.....*lb.*	*5¢*	*5½¢*	*3½¢*
½ Kegs.....*lb.*	*5½¢*	*5¾¢*	*3¾¢*
Kegs.....*lb*	*5¢*	*6¢*	
10-lb cans, 10 in case	*6¼¢*	*7¢*	*6¢*
10-lb. cans, less than 10	*10¢*	*10¢*	*8¢*

NOTE.—*In lots 1 to 3 tons a discount of 10% is given.*

Extractors, Lemon Juice

Fasteners, Blind—

—See *Squeezers, Lemon.*

Zimmerman's.....50&10%
Walling's.....50%

Cord and Weight—

Ives.....40%

Faucets—

Cork Lined.....50@50&10%
*Metallic K-g, Leather Lind*70@70&10%
Red Cedar.....40@40&10%
Petroleum.....70¢10@75%
B. & L. B. Co.:
Metal Key.....60&10%
Star.....60%
West Lock.....50&10%
John Sommer's Peerless Tin Key.... 40%
John Sommer's Boss Tin Key.....50%
John Sommer's Victor Metal Key.50&10%
John Sommer's Duplex Metal Key....60%
John Sommer's Diamond Lock.....40%
John Sommer's I. X. L. Cork Lined...50%
John Sommer's Reliable Cork Lined 50&10%
John Sommer's Chicago Cork Lined..60%
John Sommer's O. K. Cork Lined.....50%
John Sommer's No Brand, Cellar.....50%
John Sommer's Perfection Cedar.....40%
McKenna, Brass:
Burglar Proof, N. P.....35%
Improved, ¼ and ⅜ inch.....35%
Self Measuring:
Enterprise, ℔ doz. $36.00..... 40&10%
Lane's, ℔ doz. $36.00..... 40&10%
National Measuring, ℔ doz. $36..40&10%

Felloe Plates—

See Plates, Felloe.

Files—Domestic—

List revised Nov. 1, 1899.
Best Brands.....70c&5@70c&10c&5%
Standard Brands. 75c&5@75c&10c&10%
Second Quality.....75c&10c&10@80c&5%

Imported—

Stubs' Tapers, Stubs' list, July 24, '97.....30%

Fixtures, Grindstone—

Net Prices:

Inch.....	*15*	*17*	*19*	*21*	*24*
Per doz.	*$2.75*	*2.85*	*3.25*	*3.75*	*4.50*

P., S. & W. Co.....30&10@40%
Reading Hardware Co.....60%
Sargent's.....60&10&10%
Stowell's Giant Grindstone Hanger ℔ doz. $6.00
Stowell's Grindstone Fixtures, Extra Heavy.....50&10&10%
Stowell's Grindstone Fixtures Light... 60&10%

Fodder Squeezers—

See *Compressors.*

Forks—

Base Discounts Aug. 1, 1899, list:
Hay, 2 tine ..... 50&10c&5%
Boys' & Fish, 3 tine ..... 50&10c&5%
Hay & Boys', 3 tine ..... 60&5%
Hay & Boys', 4 tine 65%
Champion Hay 65%
Hay & Header, long 3 tine 65%
Header, 4 tine 65%
Barley, 4 & 5 tine, Steel ..... 60&20%
Manure, 4 tine ..... 60&15&2½%
Manure, 5 and 6 tine ..... 65%&2½%
Spading ..... 70&2½%
Potato Digger, 6 tine ..... 60&10%
Sugar Beet ..... 40&10%
Coke & Coal ..... 40&10%
Heavy Mill & Street 65%
Iowa Dig-Easy Potato ..... 60&10%
Victor, Hay ..... 60&15&2½%
Victor, Manure 65%
Victor, Header 65%
Champion, Hay 65%
Champion Header 65%
Champion, Manure ..... 60&15&2½%
Columbia, Hay ..... 60&20%
Columbia, Manure 70%
Columbia, Spading ..... 70&12½%
Hawkeye Wood Barley 70%
W. & C. Potato Digger ..... 60&12½%
Acme Hay ..... 60&10&5%
Acme Manure, 4 tine ..... 60&20&7½%
Dakota Header ..... 65&15&5%
Jackson Steel Barley ..... 65&15&5%
Kansas Header 65%
W. & C. Favorite Wood Barley 40%
Plated.—See *Spoons.*

Fountains, Stock—

Double Dewey ..... ₱ doz. $13.00

Frames— Saw—

White, Straight Bar, per doz. 75@80c
Red, Straight Bar, per doz $1.00@$1.25
Red, Double Brace, per doz. $1.40@1.50

Freezers Ice Cream—

Qt.	1	2	3	4	6
Each	$1.25	$1.60	$1.90	$2.20	$2 80

Fruit and Jelly Presses—

See *Presses, Fruit and Jelly.*

Fry Pans—See *Pans, Fry.*

Fuse— *Per 1000 Feet.*

Hemp $2.75
Cotton 3.20
Waterproof Single Taped 3.65
Waterproof Double Taped 4.40
Waterproof Triple Taped 5.15
10 & 5%

Gates, Molasses and Oil—

Stebbins' Pattern ..... 50&5%@80&10&5%

Gauges—

Marking, Mortise, &c. ..... 50&10&5%@50&10&10&5%
Chapin-Stephens Co.:
Marking, Mortise, etc. 50&10@50&10&10%
Scholl's Patent ..... 50&10@50&10&10%
Door Hangers ..... 50@50&10%
Fulton's Butt Gauge ..... 30&10%
Stanley R. & L. Co.'s Butt & Rabbet Gauge ..... 20@20&10&10%
Wire, Brown & Sharpe's 25%
Wire, Morse's 25%
Wire, P., S. & W. Co. ..... 30&10%

Gimlets— Single Cut—

Nail, Metal, Assorted, gro. $1.40@1.80
Spike, Metal, Assorted gro. $2.80@3.50
Nail, Wood Handled, Assorted, gro. $1.75@2.00
Spike, Wood Handled, Assorted gro. $4.25@4.50

Glass, American Window

See *Trade Report.*

Glasses, Level—

Chapin-Stephens Co ..... 60@60&10&10%

Glue—Liquid Fish—

Bottles or Cans, with Brush ..... 25@50%
Cans (½ pts., pts., qts., ½ gal., gal.) ..... 25@48%
International Glue Co. (Martin's) ..... 40&10@5%

Grease Axle—

Common Grade ..... *gro.* $4.50@5.50
Dixon's Everlasting ..... 10-lb pails, ea. 85¢
Dixon's Everlasting, in bxs. ₱ doz. 1 lb $1.20; 2 lb $2.00

Grips, Nipple—

Perfect Nipple Grips ..... 40&10&2%

Griddles, Soapstone—

Pike Mfg. Co. ..... 33½@33½&10%

Grindstones—

Bicycle Emery Grinder $6.50
Bicycle Grindstones, each ..... $2.50@3.00
Pike Mfg. Co:
Improved Family Grindstones, per inch, per doz. $2.00
Pike Mowe Knife and Tool Grinder, each $6.00
} 33½%
Velox Ball Bearing, mounted, Angle Iron Frames ..... each, $8.25

Halters and Ties—

Covert Mfg. Co.:
Web ..... 45&2%
Jute Rope ..... 40&5&5%
Sisal Rope ..... 30&5%
Covert's Saddlery Works:
Web and Leather Halters 70%
Jute and Manila Rope Halters 70%
Sisal Rope Halters ..... 60&20%
Jute, Manila and Cotton Rope Ties 70%
Sisal Rope Ties ..... 60&10%

Hammers—

Handled Hammers—

Heller's Machinists' ..... 40&10@40&10&10%
Heller's Farriers' ..... 40&10@40&10&10%
Magnetic Tack, Nos. 1, 2, 3, $1.25, $1.50, $1.75 ..... 40@40& 0&10%
Peck, Stow & Wilcox ..... 40&10&5%
Fayette R. Plumb:
Plumb, A. E. Nail, 33½&7½@33½&7½&7½%
Engineers' and B. S. Hand ..... 50&7½&5@50&10&7½&5%
Machinists' Hammers 50&5@50&10&5%
Riveting and Tinners' ..... 40&2½@44&10&2½%
Sargent's C. S. New List 40%

Heavy Hammers and Sledges—

Under 3 lb. ..... *lb* 50c
3 to 5 lb. ..... *lb* 40c
Over 5 lb. ..... *lb.* 30c
} 75c.@5 @8.%
Wilkinson's Smiths' ..... 9½c@10c lb.

Handles—

Agricultural Tool Handles—

Axe, Pick, &c. ..... 45@50&5%
Hoe, Rake, &c. ..... 45@50&5%
Fork, Shovel, Spade, &c.:
Long Handles ..... 45@50&5%
D Handles 40%

Cross-Cut Saw Handles—

Atkins' ..... 40&5%
Champion ..... 45@45&10%
Disston's 50%

Mechanics' Tool Handle. 75

Auger, assorted ..... *gro.* $2.50@$2 85
Brad Awl ..... *gro.* $1.65@$1 85
Chisel Handles:
Apple Tanged Firmer, gro. ass'd, $2.40@$2.65
Hickory Tanged Firmer, gro. ass'd. $2 15@$2.40
Apple Socket Firmer, gro. ass'd, $1.75@$1.95
Hickory Socket Firmer, gro ass'd, $1.45 @ $1.60
Hickory Socket Framing, gro. ass'd, $1.60@$1.75
File, assorted ..... *gro.* $1.30@$1.40
Hammer, Hatchet, Axe, &c. 50%
Hand Saw, Varnished, doz .80@85c
Not Varnished ..... 65@75c
Plane Handles:
Jack, doz.30c; Jack Bolted 75c
Fore, doz. ..... 45c; *Fore, Bolted* 90c
Chapin-Stephens Co.:
Carving Tool ..... 40@40&10%
Chisel ..... 65@65&10%
File and Awl ..... 65@65&10%
Saw and Plane ..... 40@40&10%
Screw Driver ..... 40@40&10%
Millers Falls Adj. and Ratchet Auger Handles ..... 15&10%
Nicholson Simplicity File Handle, ₱ gro. ..... $0.85@$1.50

Hangers—

NOTE.—*Barn Door Hangers are generally quoted per pair, without track, and Parlor Door Hangers per double set with track, &c.*

Barn Door, New Pattern, Round Groove, Regular:

Inch	3	4	5	6	8
Single Doz.	$0.90	1.25	1.60	1.95	2.50

Barn Door, New England Pattern, Check Back, Regular:

Inch	3	4	5	6
Single Doz.	$1.30	1.85	2.50	3.00

Allith Mfg. Co.
Reliable No. 1 ..... per. doz. $12.00
Reliable No. 2 ..... per. doz. $15.00
Chicago Spring Butt Co.:
Friction 25%
Oscillating 25%
Big Twin 25%
Chisholm & Moore Mfg. Co.:
Baggage Car Door 50%
Elevator 30%
Railroad 50%
Cronk & Carrier Mfg. Co.:
Loose Axle 60%
Roller Bearing ..... 60&10%
Lane Bros. Co.:
Parlor, Ball Bearing $4.15
Parlor, Standard $3.35
Parlor, New Model $2.85
Parlor New Champion $2.25
Barn Door, Standard, 50&10&10&5%
Hinged $6.40
Covered ..... 50&10&10%
Special ..... 50&10&10&5%
Lawrence Bros.:
Advance 60%
Cleveland ..... 60&10%
Crown 60%
Giant ..... 50&10%
New York ..... 60&10%
Peerless ..... 60&10%
Sterling 60%
Swing, No. 95 ..... 60%
Union, No. 44, $5.00; No. 45 $7.00; No. 46, $9.00 ..... 70&10&10%
McKinney Mfg. Co.:
No. 1, Special, $15 ..... 60&10%
No. 2, Standard, $18 ..... 60&10%
Hinged Hangers, $16 ..... 50%
Meyers' Stayon Hangers 60%
C. S. Smith Mfg. Co.:
Lundy Parlor Door ..... 50&10%
Monarch Barn Door ..... 60&10%
Never Jump Hinge ..... 50&10%
Peerless ..... 60&10%
Perfection ..... 70&5%
Phœnix ..... 70&5%
Wagner's Adjustable ..... 70&10%
Warehouse Anti-Friction 60%
Richards Mfg. Co.:
Pioneer Wood Track No. 3 ..... $2.25
Imp'd Wood Track No. 5 ..... $2.25
Imp'd Steel Track No. 7 ..... $2.70
Imp'd Steel Track No. 7 ..... $2.65
Ball B'r'g Steel Track No. 9 ..... $2.50
Ball B'r'g Steel Track No. 10 ..... $2.50
Roller B'r'g Steel Track No. 11 ..... $2.45
Roller B'r'g Steel Track No. 12 ..... $2.40
Ball B'r'g Steel Track No. 13 ..... $2.75
Roller B'r'g Steel Track No. 14 ..... $2 65
Ball B'r'g Trolley Track No. 15 ..... 40%
Ball B'r'g Trolley Track No. 19 ..... 40&5%
Ball Bearing Tandem Trolley Track No. 16 ..... 40%
Silent Adjustable Track No. 18 ..... 40%
Auto Adjustable Track No. 22 ..... 40%
Trolley B. D. No. 17 ..... $1.60
Trolley F. D. No. 120 ..... $2.70
Trolley F. D. No. 121 ..... $2.85
Trolley F. D. No. 151 ..... $3.00
Roller Bearing D. D. No. 25 ..... 70&5
Roller Bearing U. S. B. D. ..... 70&5%
Anti Friction B. D. ..... 60&10%
Ives' Wood Track No. 1 ..... $2.15
Ives' Imp'd Wood Track No. 2 ..... $2.15
Safety Door Hanger Co.:
Storm King Saftey 60%
U. S. Standard Hinge 60%
Stowell Mfg. and Foundry Co.
Acme Parlor Ball Bearing 40%
Ajax Hinge Door 60%
Apex Parlor Door ..... 50&10&5%
Atlas 60%
Baggage Car Door 50%
Climax Anti-Friction ..... 50&10%
Elevator 40%
Express 50%
Freight Car Door 60%
Interstate ..... 60&10%
Lundy Parlor Door ..... 50&10%
Magic 60%
Matchless ..... 60&10%
Nansen ..... 70&5%
Par or Door ..... 50&10%
Railroad ..... 50&10%
Rex Hinge Door 60%
Street Car Door 50%
Steel, Nos. 300, 404, 500 ..... 50&10%
Underwriter's Fire Door 40%
Wild West Warehouse Door 50%
Zenith Fur Wood Track ..... 50&10%
A. L. Swett Iron Works:
Eagle ..... 60&10%
Hylo ..... 50&10%
Perfection 60%
Pilot 40%
Taylor & Boggis Fdy Co.'s Kidder's Roller Bearing ..... 50&15&10&5%
Wilcox Mfg. Co.:
Bike Roller Bearing ..... 60&10%
C. J. Roller Bearing ..... 60&10%
Cycle Ball Bearing 50%
Dwarf Ball Bearing 40%
Ives, Wood Track ..... 60&10%
L. T. Roller Bearing ..... 60&10&5%
New Era Roller Bearing ..... 50&10%
O. K. Roller Bearing ..... 60&10&5%
Prindle, Wood Track 60%
Richards' Wood Track 60%
Richards' Steel Track ..... 50&10%
Spencer Roller Bearing ..... 60&10%
Tandem Nos. 1 and 2 ..... 60%
Underwriters' Roller Bearing 40%
Velvet 50%
Wilcox Auditorium Ball Bearing 30%
Wilcox Barn Trolley No. 123 ..... 40%
Wilcox Elv. Door, Nos 112 and 122½ 50%
Wilcox Elv. Door, No. 132 ..... 40%
Wilcox Fire Trolley, Roller Bearing 30%
Wilcox Le Roy Noiseless Ball Bearing 40%
Wilcox New Century ..... 50&10&10%
Wilcox O. K. Steel Track 50%
Wilcox O. K. Trolley 50%
Wilcox Trolley Ball Bearing 40%
Wilcox Wideman Narrow Gauge, Ball Bearing 40%
For Track, see *Rail*

Extra 5@10% often given.

Hangers, Garment—

Western, W. G. Co. ..... 50&10%

Gate—

Myers' Patent Gate Hangers, ₱ doz net 4.50

Hasps—

McKinney's Perfect Hasp, ₱ doz. 50%

Hatchets—

Regular list ..... 40@4.50&10%

Heaters, Carriage—

Clark, No. 3, $2.25; No. 2D, $2.75; No 3x, $4.25; No. 1, $4.50 each 15%
Clark Coal, $1.75 ₱ doz. 10%

Hinges—

Blind and Shutter Hinges—

Surface Gravity Locking Blind:
(Victor; National; 1883 O. P. Niagara; Clark's O. P.; Clark's Tip; Buffalo.)

No.	1	3	5
Doz. pair	$0.85	1.75	3.50

Mortise Shutter:
(L. & P., O. S., Dixie, &c.)

No.	1	1½	2	2½
Doz. pair	$0.70	.65	.60	.55

Mortise Reversible Shutter, (Buffalo, &c.)

No.	1	1½	2
Doz. pair	$0.75	.70	.65

North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50 ..... 10%
Parker ..... 70@75%
Reading's Gravity ..... 50&5%
Sargent's, Nos. 1, 3, 5, 11 & 13 ..... 70&10@75%
Stanley's Steel Gravity Blind Hinges, ₱ doz. sets, without screws, $0.80; with screws, $1.15.
Wrightsville Hdware Co.:
O. S., Lull & Porter ..... 7 &5%
Acme, Lull & Porter 75%
Queen City Reversible 75%
Stenger's Positive Locking, Nos. 1 & 3 ..... 70&10%
Shepard's Noiseless, Nos. 60, 65, 55 ..... 70&10%
Niagara, Gravity Locking, Nos. 1, 3 & 5 ..... 75%
1903, Old Pat'n, Nos. 1, 3 & 5 ..... 75%
Tip Pat'n, Nos. 1, 3 & 5 ..... 75%
Buffalo Gravity Locking, Nos. 1, 3 & 5 ..... 75%
Shepard's Double Locking, Nos. 20 & 25 ..... 70%
Champion Gravity Locking, No. 75 ..75%
Steamboat Gravity Locking, No. 10. 75%
Pioneer, Nos. 060, 45 & 5½ 75%
Empire, Nos. 101 & 103 ..... 70%
W. H. Co.'s Mortise Gravity Locking, No. 2 ..... 60%
Whipple's Patent Automatic 50%

Gate Hinges—

Clark's or Shepard's—Doz. sets:

No.	1	2	3
Hinges with Latches	$2.00	2.70	5.00
Hinges only	$1.50	2.05	3.80
Latches only	.70	.70	.35

New England:
With Latch ..... *doz* ....@$2.00
Without Latch ..... *doz.* ....@$1.60
Reversible Self-Closing:
With Latch ..... *doz.* ....@$1.75
Without Latch ..... *doz.* ....@$1.35
Western:
With Latch ..... *doz.* $1.75
Without Latch ..... *doz.* $1.15
Wrightsville H'dware Co.:
Shepard's or Clark's, doz. sets,

No.	1	2	3
Hinges with Latches	$2.00	2.70	5.00
Hinges only	1.40	2.05	3.80
Latches only	.70	.70	1.35

Spring Hinges—

Holdback Cast Iron gro. ..... $9.00@9.50
Non-Holdback, Cast iron gro. ..... $8.00@8.50
J. Bardsley
Bardsley's Non-Checking Mortise Floor Hinges 45%
Bardsley's Patent Checking 15%
Bommer Bros.:
Bommer Ball Bring Flo Hinges 40%
Bommer Spring Hinges 40%
Chicago Spring Butt Co.:
Chicago Spring Hinges 25%
Triple End Spring Hinges 50%
Chicago (Ball Bearing) Floor Hinge 50%
Garden City Engine House 25%
Keene's Saloon Door 25%
Columbian Hdw. Co.:
Acme, Wrt. Steel 30%
Acme, Brass 25%
American 30%
Columbia, No. 14 ..... ₱ gr. $9.00
Columbia, No. 18 ..... ₱ gr. $95.00
Columbia, Adjustable, No. 7, ₱ gr. $12.00
Gem, new list 30%
Clover Leaf ..... ₱ gr. $12.50
Oxford, new list 30%
Lawson Mfg. Co.:
Matchless 35%
Matchless Pivot 45%
Shelby Spring Hinge Co:
Crown Jamb Hinge 40%
Chief Ball Bearing Floor Hinge 45%
Royal Ball Bearing Floor Hinge 45%
The Stover Mfg. Co.:
Ideal, No. 16, Detachable, ₱ gr $12.50
Ideal, No. 4 ..... ₱ gr. $9.00
New Idea No. 1 ..... ₱ gr. $9.00
New Idea, Double Acting 35%

Extra 10% often given on most of these Hinges. Ex 10&5@10&10&5%

Wrought Iron Hinges—

Strap and T Hinges, &c., list Mar. 15, 1901:
Light Strap Hinges ..... 80&5%
Heavy Strap Hinges 80&20&10%
Light T Hinges ..... 75&10&5%
Heavy T Hinges ..... 75&5%
Extra Heavy T Hinges ..80&20%
Hinge Hasps 70%
Cor. Heavy Strap ....80&20&10%
Cor. Ex. Heavy T ..... 80&20%

Screw Hook and Strap.
6 to 12 in ..... *lb.* 3½c
14 to 20 in ..... *lb.* 3 c
22 to 36 in ..... *lb.* 2½c

Screw Hook and Eye:
¾ to 1 inch ..... *lb.* 6 c
⅝-inch ..... *lb.* 7 c
½-inch ..... *lb.* 9 c

Hitchers, Stall—

Covert Mfg. Co., Stall Hitchers 35%

Hods, Coal—

	15	*16*	*17*	*18 inch.*
Galv. Open	$2.50	2.75	3.00	3.25 ₱ doz.
Jap. Open	$2.00	2.25	2.50	2.75 ₱ doz.
Galv. Funnel	$3.00	3.25	3.50	3.75 ₱ doz.
Jap. Funnel	$2.50	2.75	3.00	3.25 ₱ doz.

Masons, Etc.—

Cleveland Wire Spring Co.:
Steel Mortar ..... each $1.45
Steel Brick ..... each $1.10

Hoes— Eye—

Scovil and Oval Pattern ..... 60&10@60&10&10%
Grub, list Feb. 23, 1899 ..... 70&10@75%
D. & H. Scovil 35%

Handled—

Aug. 1, 1899, List:
Field and Garden ..... 70&10%
Smith's Patent 50%
Meadow & Rhode Island 75%
Black Diamond ..... 70&10%
Mortar and Street ..... 70&10&10%
Planters' ..... 75&12½%
Cotton ..... 70&10&10%
Cotton Chopper ..... 75&12½%
Weeding Hoes ..... 65%&15%
Steel Weeders ..... 65%&15%
Malleable Weeders ..... 65%&15%
Ft. Madison Cotton Hoe ..... 70&10&10%
Ft. Madison Crescent Cultivator Hoe per doz ..... 70&10%
Ft. Madison Mattock Hoes:
Regular Weight ..... ₱ doz. 60%
Junior Size ..... ₱ doz. $4.00
Ft. Madison Sprouting Hoe, ₱ doz. 50%
Ft. Madison Dixie Tobacco Hoe ..... 75&10&7½%
Kretsinger's Cut Easy ..... 70&10%
Warren Hoe 55%
W. & C. Ivanhoe ..... 75&2%
B. B. 6 in., Cultivator Hoe $3.15
B. B., 6x6 in $3.85
Acme Weeding ..... ₱ doz., net $1.35
W. & C. Lightning Shuffle Hoe, ₱ doz. $4.85

Hoisting Apparatus—

See *Machines, Hoisting.*

Holders— Bit—

Angular, ₱ doz. $24.00 ..... 45&10%

Door—

Empire 50%
Bardsley's 45%

File and Tool—

Nicholson File Holders and File Handles ..... 33½@40%

Hooks—

Cast Iron—

Bird Cage, Reading ..... 50&10%
Bird Cage, Sargent's List 60%
Ceiling, Sargent's List ..... 50&10%
Clothes Line, Reading List 50%
Clothes Line, Sargent's List. 50&20&10%
Coat and Hat, Sargent's List. 50&5&10%
Clothes Line, Stowell's 70%
Coat and Hat, Reading 50%
Coat and Hat, Stowell's 70%
Coat and Hat, Wrightsville 65%
Harness, Reading List ..... 50&10%
Harness, Stowell's 60%
School House, Stowell's 70%

Wire—

Belt ..... 80&10%
Wire C. & H. Hooks ..... 75@75&10%
Atlas, Coat and Hat:
Single Cases 70%
10 Case Lots ..... 70&10%
Columbian Hdw Co. Gem ..... 60&10%
Parker Wire Goods Co.: King ..... 70&10%
Western W. G. Co. Molding 75%

Wire Goods Co:
Acme ..... 60&10%
Chief 70%
Crown ..... 70&10%
Czar 60%
V Brace ..... 70&10%
Czar Harness ..... 50&10%

Wrought Iron—
Box, 6 in., per doz. $1.00; 8 in., $1.25; 10 in., $2.50.
Cotton ..... doz. $1.05@1.25
Wrought Staples, Hooks, &c.—
See *Wrought Goods.*

Miscellaneous—
Hooks, Bench, see Stops. Bench.
Bush, Light, doz. $5.50; Medium, $6.00; Heavy, $6.50
Grass ..... Nos. 1 2 3 4
Best $1.50 1.75 2.00
Common $1.30 1.50 1.80 1.60
Potato and Manure ..... 60&15%
Wk fletres ..... lb. 5¾@6c
Hooks and Eyes:
Brass ..... 60&10&10@70%
Malleable Iron ..... 70&5@70&10%
Covert Saddlery Works' Self Locking Gate and Door Hook 60%
Ft. Madison Cut-Easy Corn Hooks, ₱ doz., $5.25 net
Bench Hooks—See *Bench Stops.*
Corn Hooks—*See Knives, Corn.*

Horse Nails—See *Nails, Horse*
Horseshoes—
See *Shoes, Horse.*

Hose Rubber—
Garden Hose, ¾-inch:
Competition ..... ft. 4½@5 c
3-ply Standard ..... ft. 6½@7 c
4-ply Standard ..... ft. 7½@8 c
3-ply extra ..... ft. 8½@9 c
4-ply extra ..... ft 10 @10½c
Cotton Garden, ¾-in., coupled:
Low Grade ..... ft. 6 @7 c
Fair quality ..... ft. 8 @9 c

Irons—Sad—
From 4 to 10 ..... lb. 3¾@3 c
B. B. Sad Irons ..... lb. 3¾@3½c
Chinese Laundry ..... lb. 4¾@5c
Chinese Sad ..... lb. 4@4½c
Mrs. Potts', per set:

Nos.	50	55	60	65
JapdTops	71	68	81	78
TinaTops	74	71	84	81

New England Pressing, lb .. 3¾@4c

Pinking—
Pinking Irons ..... doz. 50@60c

Soldering—
Soldering Coppers 2¼ and 3 .. 19@20c
1¼ and 2 ..... 21@22c

Jacks Wagon—
Covert Mfg. Co.:
Auto Screw ..... 30&5%
Steel ..... 45&2%
Covert's Saddlery Works':
Daisy ..... 60&10%
Victor ..... 60&10%
Lockport 50%
Lane's Steel ..... 30&10%

Kettles—
Brass, Spun, Plain ..... 20@25%
Enameled and Cast Iron—See *Ware, Hollow.*

Knives—
Butcher, Kitchen, &c.—
Foster Bros.' Butcher, &c 30%
Smith & Hemenway Co ..... 40&10%
Wilkinson Shear & Cutlery Co 50%
Hay and Straw—See *Hay Knives.*

Corn—
Withington Acme, ₱ doz., $2.65; Dent, $2.75; Adj. Serrated, $2.20; Serrated, $2.10; Yankee No. 1, $1.50; Yankee No. 2, $1.15.

Drawing—
Standard List ..... 70&5@70&10%
Bradley's 35%
C. E. Jennings & Co Nos. 45, 46 ..60&10%
Jennings & Griffin Nos. 51, 52 .60&10&10%
Swan's ..... 70&10&2½%
Watrous ..... 10½&10%
L. & I. J. White ..... 20&5@25%

Hay and Straw—
Lightning ..... ₱ doz. $6.50@7.00
Iwan's Sickle Edge ..... ₱ doz. $10.00
Iwan's Serrated ..... ₱ doz. $10.00
Maine ..... ₱ doz. $8.50

Mincing—
Buffalo ..... ₱ gro. $13.00

Miscellaneous—
Farriers' ..... doz. $3.00@3.25
Wostenholm's ..... ₱ doz. $3.00@3.25

Knobs—
Base, 2¼-inch, Birch, or Maple, Rubber tip, gro ..... $1.10@1.15
Carriage, Jap, all sizes .. gro. 40@45c
Door, Mineral ..... doz. 65@70c
Door, Por. Jap'd ..... doz. 70@75c
Door, Por. Nickel .... doz. $2.05@3.15
Bardsley's Wood Door, Shutter, &c .. 15%
Picture, Sargent's ..... 60&10&10%

Lacing Leather—
See *Belting Leather—*

Ladders, Step, Etc.—
Lane's Store 25%
Myers Noiseless Store Ladders 50%

Ladles—Melting—
L. & I. Mfg. Co, Low List 25%
P. S. & W 50%
Reading 50%
Sargent's ..... 45&10%

Lanterns—Tubular—
Regular Tubular No. 0 doz. $4.35@4.75
Lift Tubular .. No. 0 .. doz. $4.75@5.25
Hinge Tubular. No. 0 .. doz. $4.75@5.25
Other Styles ..... 40&10@40&10&5%

Bull's Eye Police—
No. 1. 2¾ inch ..... $2.50@2.75
No. 2, 3 inch ..... $2.75@3.00

Lasts and Stands Shoe—
Stowell's Atlas, Mallsole Iron 50%
Stowell's Badger, Cast Iron 50%

Latches—
Thumb—
Roggin's Latches, with screw, dz 35@40c

Leaders Cattle—
Small ..... doz. 55c; large, 60c
Covert Mfg. Co ..... 35&2%

Lifters, Transom—
R & E 33⅓%

Lines—

Wire Clothes, Nos...	*12*	*19*	*20*
100 feet	*$2.20*	*2.00*	*1.65*
75 feet	*$1.80*	*1.70*	*1.30*

Samson Cordage Works:
Solid Braided Chalk, No. 0 to 3 ..... 40%
Silver Lake Braided Chalk, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₱ gr. 20%
Masons' Lines, Shade Cord, &c.: White Cotton, No. 3½, $1.50; No. 4 $2.00; No. 4½, $2.50; Colors, No. 3½, $1.75; No. 4, $2.25; No. 4½, $2.75; Linen, No. 3½, $2.50; No. 4, $3.50; No. 4½, $4.50 ..... 20%
Tent and Awning Lines: No. 5, White Cotton, $7.50; Drab Cotton, $8.50 ..... 20%
Clothes Lines, White Cotton: 50 ft., $2.75; 60 ft., $3.25; 70 ft., $3.75; 75 ft., $4.00; 80 ft., $4.25; 90 ft., $4.75; 100 ft. $5.25 ..... 30%
Anniston Waterproof Clothes, 50 ft., ₱ gro.: $26.00; Gilt Edge, $24.00; Air Line $24.00; Acme, $19.00; Alabama, $17.00; Empire, $18.00; Advance, $18.00; Oriole, $22.00; Albermarle, $15.00; Eclipse, $13.50; Chicago, $12.00; Standard, $11.00; Columbia, $9.50.

Locks—Cabinet—
Cabinet Locks ..... 33⅓&@33⅓&@7⅓&

Door Locks, Latches, &c.—
[Net prices are very often made on these goods.]
Reading Hardware Co 50%
R. & E. Mfg. Co 40%
Sargent & Co ..... 40&10%
Stowell's Steel Door Latches 5%

Elevator—
Stowell's 50%

Padlocks—
Wrought Iron ..... 7½&10&5@80&5%
R. & E. Mfg. Co. Wrt. Steel and Brass ..... 75@.5&10%

Sash, &c.—
Ives' Patent:
Bronze and Brass 62½%
Crescent 50%
Iron 62½%
Wrought Bronze and Brass 5%
Wrought Steel 55%
Reading ..... net 50%

Machines—Boring—
Com. Upright, Without Augers .. $2.00
Com. Angular, Without Augers .. $2.25
Without Augers.

R. & E. Mfg. Co.:	Upright.	Angular.
Improved No. 3	$4.25	No. 1 $5.00
Improved No. 4	3.75	No. 2 3.38
Improved No. 5	2.75	
Jennings' ...	No. 4, 3.15	No. 1, 3.50
Millers' Falls		5.75
Snell's, Rice's Pat.	2.50	2.75

Corking—
Reisinger Invincible Hand Power ..... ₱ doz $45.00

Fence—
Williams' Fence Machines ..... each, $5.50

Hoisting—
Moore's Anti-Friction Differential Pulley Block 30%
Moore's Hand Hoist, with Lock Brake .. 30%

Ice Cutting—
Chandler's ..... 15&10%

Washing—

Boss Washing Machine Co.:	Per doz.
Boss No. 1; Boss Rotary	$57.00
Boss No. 7; Dietz Rotary	60.00
Champion Rotary; Banner No. 1	54.00
Standard Champion No. 1	48.00
Standard Perfection	36.00
Cinti Square Western	30.00
Uneeda American, Round	29.00

Mallets—
Hickory ..... 45&5@50%
Lignumvitæ ..... 45&5@50%
Tinners', Hickory and Applewood, doz ..... 50@55c

Mashers, Vegetable—
Western, W. G. Co., Potato ..... 60&10%

Mats—Door—
Elastic Steel (W. G. Co.) 10%

Mattocks—
See *Picks and Mattocks.*

Milk Cans—See *Cans, Milk*

Mills—Coffee, etc.—
Enterprise Mfg. Co ..... 25@30%
National, list Jan. 1, 1901 ..... 30%
Parker's Columbia & Victoria .. 50&10@80%
Parker's Box and Side ..... 50&10@60%
Sun. No. 108, 1 lb mill ..... ₱ doz $3.00
Swift, Lane Bros Co 30%

Mowers, Lawn—
Net prices are generally quoted.
Cheap ..... all sizes. $1.75@2.00
Good ..... all sizes, $2.25@2.50

	10	*12*	*14*	*16-inch*
High Grade	*4.25*	*4.50*	*4.75*	*5.00*

Continental ..... 60&5%
Great American 70%
Great American Ball Bearing, new list .. 70%
Quaker City 60%
Pennsylvania ..... 60&5%
Pennsylvania, Jr., Ball Bearing 60%
Pennsylvania Golf 50%
Pennsylvania Horse ..... 35½&5%
Pennsylvania Pony ..... 40&5%
Philadelphia:
Styles M., S., C., K. T ..... 70&5%
Style A, all Steel ..... 60&5%
Style E, High Wheel ..... 70&10&5%
Drexel and Gold Coin, low list .. 40&5%

Nails—
Cut and Wire: See Trade Report.
Wire Nails and Brads, Papered. List July 20, 1899 .. 85&10&10@90%
Hungarian, Finishing, Upholsterers', &c. See Tacks.

Horse—

Nos.	6	7	8	9	10	
A. C	25	23	22	21	21	40&5%
C. B. K	25	23	22	21	21	40%
Anchor	23	21	20	19	18	40&5%
Champ'n	28	26	25	24	23	50%
Coleman	13	12	12	11	11	net
Maud S	25	23	22	21	21	50%
New Haven	23	21	20	19	18	40&5%
Putnam	25	21	20	19	18	33⅓%
New Pat'n	19	18	17	16	16	10&10%

Western, per lb 8½c
Jobbers' special brands, per lb. 8@8½c

Picture—

	1½	*2*	*2½*	*3*	*3½ in.*
Brass Head	*.55*	*.60*	*.70*	*.95*	*1.00 gro.*
Por. Head	*..*	*1.10*	*1.10*	*1.10*	*.. grp.*

Nippers, See *Pliers and Nippers.*

Nuts—
Cold Punched: Off list.
Mfrs. or U. S. Standard.
Square, plain $5.10
Hexagon, plain $5.50
Square, C. T. & R $5.30
Hexagon, C. T. & R $6.00
Hot Pressed:
Mfrs., U. S. or Nar. Gauge Stan'd.
Square Blank $5 80
Hexagon Blank $6.30
Square Tapped $5 80
Hexagon Tapped $6 30

Oakum—
Best or Government ..... lb. 6¼c
Navy ..... lb. 4¾c
U. S. Navy ..... lb. 5¼c
Plumbers' Spun Oakum 2¾c
In carload lots ¼c lb. off f. o. b. New York.

Oil Tanks—See *Tanks, Oil.*

Oilers—
Brass and Copper ..... 60&10%
Tin or Steel ..... 70&10@75%
Zinc ..... 65&10%
Chas. or Paragon:
Brass and Copper ..... 45&10@50%
Tin or Steel ..... 75@75&10%
Zinc 65%
Malleable, Hammers' Improved, No. 1, $3.60; No. 2, $4; No. 3, $4.40 ₱ doz. 20%
Malleable, Hammers' Old Pattern, same list ..... 50&10%
American Tube & Stamping Co.:
Spring Bottom Cans ..... 70&70&10%
Railroad Oilers etc ..... 60&60&10%

Openers—Can—
French ..... doz. 85c
Iron Handle ..... doz. 25@27c
Sprague, Iron Hdle .. per doz 35@40c
Sardine Scissors .. doz. $1.75@3.00
Marvel ..... per doz. $1.25
National 50%
Stowell's Sprague ..... per doz. 35@45c
Tip Top ..... per doz. $0.75
Triumph Shear ..... ₱ gro. $9.00

Egg—
Nickel Plate ..... per doz., $2.00
Silver Plate ..... per doz., $4.00

Packing—
Asbestos Packing, Wick and Rope, 14½&15c lb.

Rubber—
Sheet, C. I ..... 8@10c
Sheet, C. O. S ..... 9@13c
Sheet, C. B. S ..... 10@14c
Sheet, Pure Gum ..... 50@65c
Sheet, Red ..... 40@50c
Jenkins' Standard, ₱ lb 80c .. 25@25&5%

Miscellaneous—
American Packing ..... 7@10c lb.
Cotton Packing ..... 16@25c lb.
Italian Packing ..... 9@12½c lb.
Jute ..... 4@4½c lb.
Russia Packing ..... 8@11c lb.

Pails—Creamery
S. S. & Co., with gauges .. No 1 $6.25; No. 2, $5.50 ₱ doz.

Galvanized—
Price per doz.

Quart	*10*	*12*	*14*
Water, Regular	*1.50*	*1.75*	*2.00*
Water, Heavy	*2.75*	*3.00*	*3.25*
Fire, Rd. Bottom	*2.50*	*2.60*	*2.80*
Well	*2.25*	*2.50*	*2.75*

Pans—Dripping—
Standard List ..... 60&10@60&10&5%

Fry—
Common Lipped:

No.	*1*	*2*	*3*	*4*	*5*
Per doz.	*$0.85*	*1.00*	*1.10*	*1.30*	*1.50*

Roasting and Baking—
Regal, S. S. & Co., ₱ doz., Nos. 5, $4.50; 10 $5.25; 20, $5.75; 30, $6.25.
Savoy, ₱ doz., net, Nos. 200, $9.00; 400, $15.00.
Simplex, ₱ gro.:

No.	40	50	60	140	150	160
	$30.00	35.00	42.00	31.00	39.00	46.00

Paper—Building Paper—

Asbestos:	*lb.*
Building Felt	*2¾c*
Mill Board, sheet, 40 x 40 inches	*3½c*
Mill Board, roll, thicker than 1-16 inch	*3½c*
Mill Board, roll, 1-16 in. thick and less	*2½c*

	Per roll
Rosin Sized Sheathing: 500 sq. ft.	
Light wt., 25 lbs. to roll	*$0.40@0.45*
Medium wt., 30 lbs. to roll	*$0.45@0.50*
Heavy wt., 40 lbs. to roll	*$0.65@0.70*
Black Water Proof Sheathing, 500 Sq ft., 1 ply, 60c; 2 ply, 85c; 3 ply, $1.10; 4 ply, $1.25.	
Deafening Felt, 2, 3 and 4½ sq. ft. to lb., ton	*$41.00*
Red Rope Roofing, 250 sq. feet per roll	*$1.75*

NOTE.—*These goods are often sold at delivered prices.*

Tarred Paper.
1 ply (roll 300 sq. ft.), ton .. $32 50@35.50
2 ply, roll 108 sq. ft ..... *55@60c*
3 ply, roll 178 sq. ft ..... *78@80c*
Slater's Felt (roll 500 sq. ft.) *75c*
NOTE.—*Above prices often include delivery, and are for Eastern territory, where prices are controlled by agreement between the manufacturers. In open territory much lower prices are current.*
R. R. M. Stone Surfaced Roofing (roll 110 sq. ft.) $2.00

Sand and Emery—
Flint Paper and Cloth .. 50&10@60%
Garnet Paper and Cloth *25%*
Emery Paper and Cloth .. 50&10@60%

Parers—Apple—
Advance ..... ₱ doz. $4.50
Baldwin ..... ₱ doz. $5.00
Bonanza Improved ..... each $0.50
Daisy ..... ₱ doz $4.00
Dandy ..... each $7.50
Eureka Improved ..... each $20.00
Family Bay State ..... ₱ doz. $15.00
Improved Bay State ..... ₱ doz. $36.00
Little Star ..... ₱ doz. $5 00
New Lightning ..... ₱ doz. $7.50
Reading 72 ..... ₱ doz. $4.00
Reading 78 ..... ₱ doz. $7.00
Rocking Table ..... ₱ doz. $6.00
Turn Table '98 ..... ₱ doz. $6.75
White Mountain ..... ₱ doz. $6.00

Potato—
Saratoga ..... ₱ doz. $7.00
White Mountain ..... ₱ doz. $6 00

Picks and Mattocks—
List Feb. 23, 1899 ..... 70&5@70&10%

Pinking Irons—
See *Irons, Pinking.*

Pins—Escutcheon—
Brass ..... 60@60&10%
Iron, list Nov. 11, '85 .. 60@60&10%

Pipe, Cast Iron Soil—
Standard, 2-6 in ..... 50&10
Extra Heavy, 2-6 in 65%
Fittings 70%

Pipe, Merchant,
Steel Carload Lots, f. o. b, Pittsburgh.

Merchant Pipe.	*Black.*	*Galvanized.*
⅛, ¼, ⅜ inch	*68%*	*58%*
½ inch	*71%*	*61%*
¾ to 6 inch	*75%*	*65%*
7 to 12 inch	*71%*	*61%*

Pipe, Sewer—
Jobbers' Prices—
Standard Pipe and Fittings, 2 to 24 in.
New England 67%
New York and New Jersey 70%
Maryland, Delaware, East Penn. 72%
West Penn and West Va 75%
Virginia 75%
Ohio, Michigan and Ky 75%
Indiana 77%
Carload lots are generally delivered.

Pipe, Stove—

Edwards' Nested Stove Pipe:	C. L.	L. C. L.
5 in., per 100 joints	$7.50	$8 50
6 in., per 100 joints	8.00	9.00
7 in., per 100 joints	9.00	10.00

Planes and Plane Irons—
Wood Planes—
Bench, First quality .. 40&5@40&10%
Bench, Second qual .. 50&5@50&10%
Molding ..... 33⅓&5@33⅓&10%
Bailey's (Stanley R. & L. Co) ..... 5&10@25&10&10%
Chapin-Stephens Co.:
Bench, First Quality ..... 40@40&10%
Bench, Second Quality ..... 50@50&10%
Molding ..... 33⅓@33⅓&10%
Toy and German ..... 40@40&10%
Gage Self Setting 35%
Union 60%

Iron Planes—
Bailey's (Stanley R. & L. Co) ..... 25&10@25&10&10%
Chaplin's Iron Planes ..... 50&10%
Miscellaneous Planes (Stanley R. & L. Co.) ..... 20&10@20&10&10%
Sargent's ..... 60@50&10%
Union 60%

Plane Irons—
Wood Bench Plane Irons ..... 30&5@30&10%
Buck Bros 30%
Chapin-Stephens Co ..... 30@30&10%
Stanley R. & L. Co .. 20&10@20&10&10%
L. & I. J. White ..... 20&5@25%

Planters, Corn, Hand.
Kohler's Eclipse ..... ₱ doz. $8.50

Plates—
Felloe ..... lb. 3¾@4c
Self-Sealing Pie Plates (S. S. & Co.), ₱ doz. $2.00 ..... 50%

Pliers and Nippers—
Button Pliers ..... 75@75&10%
Gas Burner, per doz., 5 in., $1.25@ $1.30; 6 in., $1.45@1.50

Gas Pipe..	*7*	*8*	*10*	*12-in.*
	$2.00	*$2.25*	*$3.00*	*$3.75*

Acme Nippers ..... 50@50&5%
Bernard's:
Cutting Nippers 33⅓%
Parallel, Pliers 33⅓%
Paragon Pliers 50%
Lodi Pliers 50%
Elm City Fence Pliers 33⅓%
Cronk & Carrier Mfg. Co.:
American Button ..... 75&10%
Cronk's 60%
Improved Button ..... 70&10%
Stub's Pattern 50%
Combination and others 33⅓%
Heller's Farriers' Nippers, Pincers, and Tools 40&10@40&10&10%
P., S. & W. Tinners' Cutting Nippers, 30@30&10%
Swedish Side, End and Diagonal Cutting Pliers 50%
Utica Drop Forge & Tool Co.:
Pliers and Nippers, all kinds 40%

Plumbs and Levels—
Chapin Stephens Co.:
Plumbs and Levels ..... 30@30&10&10%
Chapin's Imp. Brass Cor ..... 40@40&10&10%
Pocket Levels ..... 30@30&10&10%
Level Glasses ..... 60@60&10&10%
Disston's Plumbs and Levels 70%
Disston's Pocket Levels 70
C. E. Jennings & Co.'s Iron, Adjustable ..... 33⅓&10%
C. E. Jennings & Co.'s Iron ..... 25&10%
Stanley R. & L. Co ..... 30&10@70&10&10%

Stanley's Duplex..... 20@20&10&10%
Woods' Extension.....33⅓&5

Poachers, Egg—

Buffalo Steam Egg Poachers, ₱ doz., No. 1, $6.00; No. 2, $9.00; No. 3, $12.00; No. 4, $12.00.....50%

Points, Glaziers'—

Bulk and 1 lb. papers.....*lb.* 6¼c
½-lb. papers.....*lb.* 6¾c
¼-lb. papers.....*lb.* 6¾c

Pokes, Animal—

Ft. Madison Hawkeye.....₱ doz. $3.25
Ft. Madison Western.....₱ doz. $4.00

Police Goods—

Manufacturers' Lists.....25@25&5%
Tower's.....25%

Polish—Metal—

Prestoline Liquid, No. 1 (¼ pt.), ₱ doz. $3.00; No. 2 (1 qt.), $9.72.....40%
Prestoline Paste.....40&10%
George William Hoffman:
U. S. Metal Polish Paste, 3 oz. boxes, ₱ doz. 50¢; ₱ gr. $4.50; ½ lb boxes, ₱ doz. $1.25; 1 lb boxes, ₱ doz. $2.25.
U. S. Liquid, 8 oz. cans, ₱ doz. $1.25; ₱ gr. $12.00.
Barkeepers' Friend Metal Polish, ₱ doz. $1.75; ₱ gr. $18.00.
Wynn's White Silk, ½ pt. cans, ₱ doz.....$2.00

Stove—

Black Eagle Benzine Paste, 5 lb cans ... ₱ lb 10¢
Black Eagle, Liquid, ½ pt. cans ₱ doz. 75¢
Black Jack Paste, ¼ lb cans, ₱ gro. $9.00
Black Kid Paste, 5 lb can.....each, $0.65
Ladd's Black Beauty, gr. $10.00.....50%
Joseph Dixon's, ₱ gr. $5.75.....10%
Dixon's Plumbago.....₱ lb 8¢
Fireside.....₱ gr. $2.50
Gem, ₱ gr. $4.50.....10%
Japanese.....₱ gr. $3.50
Jet Black.....₱ gr. $3.50
Peerless Iron Enamel, 10 oz. cans..... ₱ doz. $1.50
Wynn's:
Black Silk, 5 lb pail.....each 70¢
Black Silk, ½ lb box.....₱ doz. $1.00
Black Silk, 5 oz. box.....₱ doz. $0.75
Black Silk, ½ pt. liq.....₱ doz. $1.00

Powders, Corn—

1 qt., Square.....*gro. $9.00*
1 qt., Round.....*gro. $10.00*
1½ qt., Square.....*gro. 11.00*
2 qt., Square.....*gro. 13.00*

Post Hole and Tree Augers and Diggers—

See also *Diggers, Post Hole, &c.*

Posts, Steel—

Steel Fence Posts, each, 5 ft., 42¢; 6 ft., 46¢; 6 4½ ft., 48¢.
Steel Hitching Posts, each.....$1.30

Potato Parers—

See *Parers, Potato.*

Pots— Glue—

Enameled.....40%
Tinned.....35%

Powder—

In Canisters:
Duck, 1 lb. each.....45c
Fine Sporting, 1 lb. each.....75c
Rifle, ½-lb. each.....15c
Rifle, 1-lb. each.....25c
King's Semi-Smokeless:
Keg (25 lb bulk).....$6.50
Half Keg (12½ lb bulk).....$3.50
Quarter Keg (6¼ lb bulk).....$1.90
Case 24 (1 lb cans bulk).....$8.50
Half case (1 lb cans bulk).....$4.50

King's Smokeless:	Shot Gun	Rifle
Keg (25 lb bulk).....	$12 00	$15.00
Half Keg (12½ lb bulk)	6.25	7.75
Quarter Keg (6¼ lb bulk)	3.25	4.00
Case 24 (1 lb cans bulk)	14.00	17 00
Half case 12 (1 lb cans bulk)	7.25	8 75

Robin Hood Smokeless Shot Gun..50&20%

Presses—

Fruit and Jelly—

Enterprise Mfg. Co.....20@25%
Sensible.....33⅓%
2 qt., $2.00; 4 qt., $4.00; 10 qt., $6.00 each.

Seal Presses—

Morrill's No. 1, per doz. $20.00.....50%

Pruning Hooks and Shears—See *Shears.*

Pullers, Nail—

Cyclops.....50%
Duplex Improved Nail Puller.....50%
Miller's Falls, No. 3, per doz. $12.00..... 33⅓&10%
Pearson No. 1, Cyclone Spike Puller, each $30 00.....50%
Pelican, ₱ doz. $9.00.....40&10%
Scranton, Case Lots:
No. 2 B (large).....$5.50
No. 3 B (small).....$3.00
Smith & Hemenway Co.:
Alex.....60%
Diamond B, No. 2, ca e lots, ₱ doz $6.00
Diamond B, No. 3, case lots, ₱ doz $5.50
Eureka.....50%
Giant, No. 1, ₱ doz. $18; No. 2, $10.50; No. 3, $15.....40%
Yankee.....60⅔%

Pulleys—Single Wheel—

Inch.....	*2*	*2½*	*3*
Awning...doz	*$0.55*	*.85*	*1.15*

Hay Fork, Swivel or Solid Rye..... doz., 4 in., $1.15; 5 in., $1.40

Inch	*2*	*2¼*	*2½*
Hot House,doz	*$0.70*	*.90*	*1.25*
Inch	*1¼*	*1½*	*1¾*	*2*
Screw.....doz	*$0.16*	*.19*	*.23*	*.30*
Inch	*1¼*	*2*	*2¼*	*2½*
Side.....doz	*$0.30*	*.40*	*.55*	*.63*
Inch.....	*1½*	*1¾*	*2*	*2½*
Tackle....doz	*$0.30*	*.42*	*.58*	*1.00*

Stowell's:
Ceiling or End, Anti-Friction..60&10%
Dumb Waiter, Anti-Friction...60&10%
Electric Light.....60%
Side Anti-Friction.....60&10%

Sash Pulleys—

Common Frame; Square or Round End, per doz., 1¾ and 2 in.,.16@19c
Auger Mortise, no Face Plate, per doz. 1¾ and 2 in.....16@19c
Auger Mortise, with Face Plate, per doz., 1¾ and 2 in.....16@19c
Acme.....1¾ in., 16¢; 2 in., 19¢
Common Sense, 1¾ in.... ₱ doz., 18¢; 2 in., 20¢.
Fox-All-Steel, Nos. 3 and 7, 2 in. ₱ doz 50%
Grand Rapids All Steel Noiseless....50%
Ideal.....70&5%
Niagara.....1¾ in., 16¢; 2 in., 19¢
No. 26, Troy....1¾ in., 14½¢; 2 in., 16½¢
Star.....1¾ in., 16¢; 2 in., 19¢
Tackle Blocks—See *Blocks.*

Pumps—

Cistern.....60@&10%
Pitcher Spout.....80@80&10%
Wood.....50@50&10%

Pump Leathers—

Plunger and Lower Valve—Per gro.:

Inch..	*2*	*2¼*	*2½*	*2¾*
	$2.20	*2.50*	*2.75*	*3.00*
Inch..	*3*	*3¼*	*3½*	*3¾*	*4*
	$3.30	*3.60*	*3.85*	*4.10*	*4.40*

Plunger Cup Leathers—Per 100:

Inch	*2½*	*3*	*3½*	*4*
	$2.75	*3 85*	*5.00*	*6.00*

Barnes Dbl. Acting (low list).... 50&10%
Contractors' Rubber Diaphragm No. 2 B. & L. Block Co.....$18.00
Daisy Spray Pump.....₱ doz. $7.20
Flint & Walling's Fast Mail (low list).55%
Flint & Walling's Pitcher Spout.....40%
National Specialty Mfg. Co., Measuring, $4.00.....30%
Mechanical Sprayer.....$7.20
Myer's Pumps, low list.....50%
Myers' Power Pumps.....50%
Myers' Spray Pumps.....50%

Punches—

Saddlers' or Drive, good..doz. 65@70c
Spring, single tube, good quality... $1.75@2.00
Revolving (4 tubes)...doz. $3.50@3.75
Bemis & Call Co.'s Cast Steel Drive....50%
Bemis & Call Co.'s Check.....55%
Benard Spring Belt Punches.....8⅓%
Lodi Spring Belt Punches.....30%
Morrill's No. 1 (A.B.C.) ₱ doz., $15.00 ..30%
No. 2, ₱ doz. $22.50.....30%
Hercules, each $7.50.....30%
Niagara Hollow Punches.....40%
Niagara Solid Punches.....55&10%
Paragon Spring Belt Punches.....30%
Steel Screw, B. & K. Mfg Co.....40%
Tinners' Hollow, P. S. & W. Co.35&35&5%
Tinners' Solid, P., S. & W. Co., ₱ doz., $1.44.....60%

Rail— Barn Door, &c.—

Cast Iron, Barn Door: Flange Screw Holes for Rd. Groove Wheels:

	½	⅝	¾	*In.*
	$1.70	*$2.10*	*$3 00*	*100 feet.*

Angular for Sq. Groove Wheels:

Small.	*Med.*	*Large.*	
$1.50	*1 90*	*2.60*	*100 feet.*

Sliding Door, Iron Painted..2½@2¾c
Sliding Door, Wrought Brass, 1⅛ in.....lb.36c...30%
Allith Mfg. Co., No. 1, Reliable Hanger Track, ₱ foot.....8¢
Allith Mfg. Co., No. 2, Reliable Hanger Track, ₱ foot.....10¢
Cronk's Double Braced Steel Rail, ₱ foot.....3½¢
Cronk's O. N. T. Rail.....3½¢
Lane's Hinged Track, ₱ 100 ft., 1 in., $3.70; 1¼ in., $4.40
Lanes' O. N. T., ₱ 100 ft., 1 inch, $3.00; 1¼ inch, $3.70; 1½ inch, $4.00.
Lanes' Standard, 1¼ in., ₱ 100 ft 4.10
Lawrence Bros., ₱ ft. 11¢.....60%
Lawrence Bros. New York.....3½¢
McKinney's Hinged Hanger Rail ₱ foot, 11¢.....5%
McKinney's None Better.....₱ ft. 3½¢
McKinney's Standard .....₱ ft. 4
Myers' Stayon Track .....50&10%
Safety Door Hanger Co.'s Storm King Safety.....60%
Safety Door Hanger Co.'s U.S. Standard 60%
Smith's Wrought Bracket, Plain.....3½¢
Smith's Special .....4½¢
Smith's Never Jump, per ft. 11¢.....50%
Smith's Plain Steel 30%
Smith's Milled Steel.....4½¢
Stowell's Cast Rail .....₱ ft. 13½¢
Stowell's Steel Rail, Plain.....25%
Stowell's Wrought Bracket, 13-16 in.... ₱ ft. 8¢
Stowell's Wrought Bracket, 1¼x5-15... ₱ ft. 7¢
Swett's Hylo, per ft. 11¢.....50&10%
Swett's P. L. B. Steel Rail, ₱ 100 ft. $3.00

Rakes—

Net Prices, Malleable Rakes:

	10	*12*	*14*	*16-tooth*
Shank.....	*$1.50*	*1.60*	*1.75*	*1.85*
Socket.....	*$1.65*	*1.80*	*1.95*	*2.10*

Steel, Garden and Gravel, Aug. 1, '99 List 70%
Weldless Steel .....25&5%
Malleable Iron, Garden.....70&10%
Lawn Rakes, Metal Head, per doz., 20 teeth.....$3.25@3.50
24 teeth.....$3.50@3.75
Fort Madison Red Head Lawn.....$3 25
Fort Madison Blue Head Lawn $2.70
Jackson Lawn, 29 and 30 teeth, ₱ doz., net, $4.35
Kohler's:
Lawn Queen, 20-tooth, ₱ doz.....$3 45
Lawn Queen, 24-tooth, ₱ doz $3.60
Paragon, 20 tooth, ₱ doz $2.75
Paragon, 24-tooth, ₱ doz.....$3.00
Steel Garden, 14-tooth, ₱ doz. $2.98
Malleable Garden, 14-tooth, ₱ doz..$3.00

Rasps, Horse—

Disston's.....75%
Heller Bros.....70&5&10&10&5%
McCaffrey's American Standard ..... 60&10&5%
New Nicholson.....50&10&7½%
see also *Files.*

Razors—

Boraste.....60 & 10%
Fox Razors, No. 42, ₱ doz. $20.00 } 25
Fox Razors, No. 44, ₱ doz. $20.00 } to
Fox Razors, No. 82, Platina, ₱ doz. $35.00

Red Devil.....65%
Silberstein:
Carbo Magnetic.....$18.00
Griffon, No. 65.....$15.00
Griffon, No. 00.....$12.00
All other Razors.....40%

Safety Razors—

Safety Razors.....40%
New Gem, in Tin Boxes.....₱ doz. $12.00
New Gem, Extra Blades.....₱ doz. $3.35
Gem Outfits (Razor, Strop, etc.).... ₱ doz. $5.60
Complete Razor, extra Blade in Leather Case.....₱ doz. $27.00
Silbersein.....40%

Reels— Fishing—

Bishop's Independent Fish Reel Spooler, ₱ doz.....$30.00
Hendryx:
M 6, Q 6, A 6, B 6, M 9¼, M 16, Q 16, A 16, B 16, 4008, Rubber Populo, Nickeled Populo.....20%
Aluminum, German Silver, Bronze.25%
1240 N, 124 N.....20%
3004 N, 96 N, 6 RM, G 9.....25%
4 N, 6 PN, 24 N, 26 PN.....20%
2904 P.....33⅓%
2904 PN.....33⅓%
0924 N.....33⅓%
02084 N.....33⅓%
002904 PN.....33⅓%
802 N.....33⅓%
988 PN, 2904 N, 974 PN.....25%
5009 PN, 5009 N.....20%
Competitor, 102 P, 102 PN, 202 P, 202 PN, 102 PR, 202 PR.....25%
304 P, 304 PN, 00304 P, 00304 PN.33⅓&5

Registers—*List July 1, 1903.*

Black Jap, *White Jap*, *Bronzed*, *Nickel Plated*, *Electro Plated*} 75@75&10

Registers, Cash—

Sun, No. 10, Metal Cabinet.....$30.00
Sun, No. 10, Wood Cabinet.....$25.00

Revolvers—

Single Action.....85@90c
Double Action, except 44 cal......*$1.90*
Double Action, 44 caliber.....*$2.05*
Automatic.....*$3.60*
Hammerless.....*$4.10*
Note.—Jobbers frequently cut the above prices of manufacturers for small trade.

Riddles, Hardware Grade

16 in., per doz.....*$2.25@$2.50*
17 in., per doz.....*$2.50@$2.75*
18 in., per doz.....*$2.75@$3 00*

Rings and Ringers—

Bull Rings—

2	*2½*	*3 Inch*	
Steel.....$0 70	*0.75*	*0.80*	*doz.*
Copper..... 1.00	*1.15*	*1.40*	*doz.*

Hog Rings and Ringers—

Hill's Rings....gro. boxes, $4.25@4.50
Hill's Ringers, Gray Iron. doz. 50@55c
Hill's Ringers, Mal. Iron, doz. 70@75c
Blair's Rings.....per gro. $5.00@5.25
Blair's Ringers...per doz. $0.60@ .65
Brown's Rings....per gro. $5.25@5.50
Brown's Ringers...per doz. $0.65@ .70

Rivets and Burrs—

Copper.....*60@60&5%*
Iron or Steel.....*75&5@75&10%*

Rollers—

Acme, Stowell's Anti-Friction.....50%
Barn Door, Sargent's list.....40%
Cronk's Stay.....60&5%
Cronk's Brinkerhoff.....66⅔%
Lane's Stay.....33⅓&5%
Stowell's Barn Door Stay.....₱ doz. $1.00

Rope—

Manila, 7-16 in. diam. and larger, tarred or untarred.....*lb.* .. *@18 c*
Manila, Hay, Hide and Bale Ropes, Medium and Coarse.....*lb.* .. *@12 c*
Sisal, 7-16 in. diam. and larger:
Mixed.....*lb.* .. *@ 8 c*
Pure.....*lb.* .. *@ 9¼c*
Sisal, Hay, Hide and Bale Ropes, Medium and Coarse:
Mixed.....*lb.* .. *@ 8 c*
Pure.....*lb.* .. *@ 9¼c*
Sisal, Tarred, Medium Lath Yarn:
Mixed.....*lb.* .. *@ 7½c*
Pure.....*lb.* .. *@ 8¼c*
Cotton Rope: *—Lb.—*
Best.....*¼-in. and larger..* *16@18c*
Medium..¼ in. and larger.. *16@18c*
Com ....¼-in. and larger.. *12@13c*
Jute Rope:
Thread No. 1, ¼-in. and up, lb. *6 c*
Thread No. 2, ¼-in. and up, lb. *5½c*
Old Colony Manila Transmission Rope, ₱ lb 17½¢

Wire Rope—

Galvanized.....*47½&5%*
Plain.....*55&5%*

Ropes, Hammocks—

Covert Mfg. Co.:
Jute.....40&5%
Sisal.....5%
Covert Saddlery Works.....60&5%

Rules—

Boxwood.....*60&10@60&10&5%*
Ivory.....*35&10@35&10&5%*
Chapin-Stephens Co.:
Boxwood.....60@60&10%
Ivory.....35&35&10&10%
Miscellaneous.....50&50&10&10%
Combination.....55&55&10%
Stationers'.....10&10&10%
Lufkin's Steel.....50&10%
Lufkin's Lumber.....60&10%
Stanley R. & L. Co.:
Boxwood.....60&10&5%
Ivory.....35@35&10& 5%
Upson Nut Co.:
Boxwood.....60@60&10%
Ivory.....35&10@35&10&10%

Sash Locks—See *Locks, Sash*

Sash Weights—

See *Weights, Sash.*

Sausage Stuffers or Fillers

—see *Stuffers or Fillers, Sausage*

Saw Frames—See *Frames, Saw.*

Saw Sets—See *Sets, Saw.*

Saw Tools—See *Tools, Saw.*

Saws—

Atkins:
Circular.....50%
Band.....50&10@60%
Cross Cuts.....35&5%
Mulay, Mill and Drag.....50%
One-Man Saw.....40%
Wood Saws.....40%
Hand, Compass, &c.....40%
Chapin-Stephens Co.:
Turning Saws and Frames....30@30&10%
Diamond Saw & Stamping Works:
Sterling Kitchen Saws.....30&10&5%
Disston's:
Circular, Solid and Inserted Tooth..50%
Band, 3 to 14 in wide.....6%
Band, ¼ to 2¾.....70%
Crosscuts.....45%
Narrow Crosscuts.....50%
Mulay, Mill and Drag.....50%
Framed Woodsaws.....35%
Woodsaw Blades.....35%
Woodsaw Rods.....25%
Hand Saws, Nos. 12, 99, 9, 16, d100, D8, 120, 79, 77, 8.....25%
Hand Saws, Nos 7, 107, 107½, 3, 1, 0, 00, Combination.....30%
Compass, Keyhole, &c.....25%
Butcher Saws and Blades.....35%
C. E. Jennings & Co.'s.:
Back Saws.....25&10%
Butcher Saws.....3&&10%
Compass and Key Hole Saws.35&5&10%
Framed Wood Saws.....30&10%
Hand Saws.....20&2½&10%
Wood Saw Blades.....30&10%
Millers Falls:
Butcher Saws.....15&10%
Star Saw Blades.....15&10%
Peace & Richardson's Hand Saws.....30%
Simonds':
Circular Saws.....50%
Crescent Ground Cross Cut Saws..35%
One-Man Cross Cuts.....40&10%
Gang Mill, Mulay and Drag Saws..50%
Hand Saws.....50%
Back Saws.....25&25&7½%
Butcher Saws.....25&35&7½%
Hand Saws.....25&25&7½%
Hand Saws, Bay State Brand.....45%
Compass, Keyhole, &c .....25&25&7½%
Wood Saws.....35&35&7½%
Wheeler, Madden & Clemson Mfg. Co.'s
Cross Cut Saws.....50%

Hack Saws—

Atkins' Hack Saw Blades A A A.... 25%
Disston:
Concave Blades.....25%
Keystone.....40%
Hack Saw Frames.....30%
Fitchburg File Works, Tne Best.....25%
C. E. Jennings & Co.'s:
Hack Saw Frames, Nos. 175, 180..... 35&5&10%
Hack Saws, Nos. 175, 180, complete. 35&5&10%
Goodell's Hack Saw Blades.....40%
Griffin's Hack Saw Frames.. 35&5&10%
Griffin's Hack Saw Blades.....35&5&10%
Star Hack Saws and Blades.....15&10%
Sterling Hack Saw Blades.....25%
Sterling Hack Saw Frames .....30& 0&5%

Scroll—

Barnes' No. 7, $15.....25%
Barnes' Scroll Saw Blades.....40%
Barnes' Velocipede Power Scroll Saw, without boring attachment, $18; with boring attachment, $20.....20%
Lester, complete, $10.00.....15&10%
Rogers, complete, $4.00.....15&10%

Scalers, Fish—

Bishop's Lightning.....₱ doz. $3 10
Covert's Saddlery Works .....60&10%

Scales—

Family, Turnbull's.....*50@50&10%*
Counter:
Hatch. Platform, ½ oz to 8 lbs. doz $5.50
Two Platforms, ½ oz to 8 lbs. doz. $16
Union Platform, Plain..$1.70@1.90
Union Platform, Striped $1.85@2.15
Chatillon's:
Eureka.....2%
Favorite.....40%
Grocers' Trip Scales.....50%
Chicago Scale Co.:
The "Little Detective," 25 lbs.....50%
Union or Family No. 2.....60%
Portable Platform (reduced list).....50%
Wagon or Stock (reduced list) ..25&35%
Pelouze Scales—Household, Counter, Candy, Ice, Postal, Computing.....50%
"The Standard" Portables.....50%
"The Standard" R. R. and Wagon.....50%

Scrapers—

Box, 1 Handle.....*doz. $7.00@2.00*
Box, 2 Handle.....*doz. $2 60@2.85*
Ship Light, $2.00; Heavy, $4.50
Adjustable Box Scraper (S. R. & L. Co ... $6.00.....30@30&10%
Chapin-Stephens Co., Box.....50@50&10%

Screens, Window, and Frames—

Flyer Pattern Screens ..60&5@60&5&2½%
Maine Screen Frames.....40&10&5%
Perfection Screens.....60@5@60&5&2½%
Phillips' Screen Frames, 60&5@60&5&2½%
Porter's:
Fairview Screens.....60&5@60&5&2½%
Hummer Screens.....60&5@60&5&2½%
Klondike Screens.....60&5@60&5&2½%
See also *Doors.*

Screws—Bench and Hand—

Bench, Iron..doz. 1 in., $2.50@2.75 : 1⅛, $3 00@3.25 : 1¼, $3.50 @3.75
Bench, Wood, Beech....doz. 30@30&5
Hand. Wood. .....30@30&5%
R. Hiss Mfg. Co, Hand..... 30%
Chapin-Stephens Co., Hand....30@30&10%

Coach, Lag and Hand Rail—

Lag, Common Point, list Oct. 1. 99..... 80&5%
Coach and Lag, Gimlet Point, list Oct. 1, '99..... 80%
Hand Rail, list Jan. 1, '81. 70&10@75%

Jack Screws -

Standard List.....75&10@30&5%
Millers Falls..... 50&10&10%
Millers Falls, Roller.....50&10%
P., S. & W..... 50@50&5%
Sargent..... 70%

Machine—

List Jan. 1, '98.
Flat or Round Head, Iron.50@55&10%
Flat or Round Head, Brass50@50&15%

Set and Cap—

Set (Iron or Steel)70&10&5% } *Extra*
Sq. Hd. Cap.....65&10&5% } *10&10*
Hex. Hd. Cap.....65&10&5% } *often*
Rd. or Fillister Hd. Cap 60% } *given.*

Wood—

List July 23, 1903.
Manufacturers' printed discounts :
Flat Head, Iron.....87½&10@.. .%
Round Head, Iron.....85&10@....%
Flat Head, Brass .....85&10@....%
Round Head, Brass .....80&10@....%
Flat Head, Bronze....77½&10@ ...%
Round Head, Bronze.....75&10@...%
Drive Screws.....87½&10%

Scroll Saws—See Saws, Scroll.

Scythes— *Per doz.*

Clipper Pattern, Grass...$4.25@$5 00
Full Polished Clipper.....$4.75@$5.50
Grain .. ..$7.00@$7.50
Clipper, Grain.....$7.75@$8.25
Weed and Bush.....$4.5)@$5.00

Seeders— Raisin—

Enterprise..... 25@30%

Sets— Awl and Tool—

Brad Awl and Tool Sets :
Wood Hdle., 10 Awls doz. $2.00@2.25
Wood Hdle., 1¼ Awls, 6 Tools .. doz. $2.50@2.60
Aiken's Sets, Awl and Tools :
No. 20, ₱ doz. $10.00.....50&10&10%
Fray's Adj. Tool H'dls...Nos. 1, $12; 2, $18; 3, $12; 4, $9; 5, $7.....50%
C. E. Jennings & Co.'s Model Tool Holders .....30&10%
Millers Falls Adj. Tool H'dls, No. 1, $12; No. 4, $12; No. 5, $18 .... 15&10%
Stanley's Excelsior :
No. 1, $7.50 ; No. 2 $4.00; No. 3, $5.50.....30@30&10&10%

Garden Tool Sets—

Ft. Marion, Taree Pieces, Hoe, Rake and Shovel.....₱ doz. sets.....$9.00

Nail—

Square.....per gro. $2.25@2.50
Round, Blk. and Pol., assorted..... gro. $1.80@2.00
Octagon.....gro. $ 4.50@5.75
Buck Brothers..... 27½%
Cannon's Diamond Point, ₱ gr. $13..25%
Mayhew's.....per gro. $9.00
Snell's Corrugated, Cup Pt...per gro. $7.50
Snell's Knurled, Cup Pt....per gro $7.50

Rivet—

Regular list.....70&10@75%

Saw—

Aiken's:
Genuine..... 50&10%
Imitation ..... 50&10%
Atkin's:
Criterion..... 40%
Adjustable..... 40%
Bemis & Call Co's.:
Cross Cut..... 30%
Hammer, new Pat..... 45%
Plate..... 20%
Spring Hammer..... 30%
Disston's Star and Monarch..... 25%
Morrill's No. 1, $15.00..... 50%
Nos. 3 and 4, Cross Cut, $20.63..... 50%
No. 5, Mill, $30.00..... 50%
Nos. 10, 11, 95, $13.84..... 50%
No. 1 Old Style, $10.00..... 50%
Special, $16.25..... 50%
Giant Royal Cross Cut .....₱ doz. $8 50
Royal, Hand.....₱ doz., $5.0
Taintor Positive. .....₱ doz $6.75

Shaving—

Fox Shaving Sets, No. 30, per doz, $24.00net

Sharpeners, Knife—

Chicago Wheel & Mfg. Co..... 63%

Shaves Spoke—

Iron.....doz. $1 00@1 15
Wood.....doz. $1.75@2.00
Bailey's (Stanley R. & L. Co) ..... 20@30&10&10%
Chapin-Stephens Co .....40@30&10&10%
Goodell's, ₱ doz. $9.00..... 15&10%
Wood's F1 and F2..... 50%

Shears—

Cast Iron...	*7*	*8*	*9 in.*
Best	*$16.00*	*18.00*	*20.00 gro.*
Good	*$13.00*	*15.00*	*17 00 gro.*
Cheap	*$5.00*	*6.00*	*7.00 gro.*

Straight Trimmers, &c.:
Best quality, Jap.....70@70&10%
" Nickel.....60@60&10%
Fair qual. Jap.....80@80&5%
" Nickel.....75@75&10%
Tailors' Shears.....40@40&10%
Acme Cast Shears.....40@40&5%
Heinisch's Tailors' Shears..... 10%
Wilkinson's Hedge .....1900 list 45%
Wilkinson's Branch, Lawn and Border..... 40%
Wilkinson's Sheep .....1900 list. 50%

Tinners' Snips—

Steel Blades .....20&5@20&10
Steel Laid Blades .....40&10@50%
Forged Handles, Steel Blades, Berlin ..... 40@40&10%
Heinisch's Snips 40%
Jennings & Griffin Mfg. Co.'s, 6¼ to 10 inch ..... 40&7½&10%
Niagara Snips 40%
P. S & W. Co. 20%
Triumph Pipe Shear.....₱ doz. 9.00

Pruning Shears and Tools—

Cronk's Grape Shears..... 33⅓%
Cronk's Pruning Shears..... 33⅓%
Disston's Combined Pruning Hook and Saw, ₱ doz. $18.00 ..... 25%
Disston's Pruning Hook, ₱ doz, $12.00 ..... 25%
John T. Henry Mfg. Co.:
Pruning Shears, all grades.....40@40&5%
Orange Shears.....50&10&50&20%
Grape .....40&10@50%
Tree Pruners..... 75%
P., S. & W. Co..... 33⅓%

Sheaves—Sliding Door—

Stowell's Anti-Friction 50%
Patent Roller Hatfield's, Sargent's list, 70&10%
Reading..... 50%
R. & E. list.. ..... 33⅓%
Wrightsville Hatfield Pattern.....80%

Sliding Shutter—

Reading list..... 50%
R. & E. list..... 33⅓%
Sargent's list..... 50&10%

Shells— Shells, Empty—

Brass Shells, Empty :
First quality, all gauges.....60&5%
Climax, Club, Rival, 10 and 12 gauge.. 65&5%
Paper Shells, Empty :
Acme, Ideal, Leader, New Rapid, Magic 10, 12, 16 and 20 gauge..25&5%
Blue Rival, New Climax, Challenge, Monarch, Defiance, Repeater, Yellow Rival, 10, 12, 15 and 20 gauge.....20%
Climax, Union, League, New Rival 10 and 12 gauge..... .....25%
Climax, Union, League, New Rival, 14, 16 and 20 gauge (87.50 list)..20%
Expert, Metal Lined and Pigeon, 10, 12, 16 and 20 gauge..... 33⅓&5%
Robin Hood, Low Brass.....20&10%
Robin Hood, High Brass.....30&10%

Shells, Loaded—

Loaded with Black Powder 40%
Loaded with Smokeless Powder, medium grade.....40&5%
Loaded with Smokeless Powder, high grade.....40&10&10%
Robin Hood Smokeless Powder:
Robin Hood, Low Brass. 50%
Comets, High Brass.....50&10&5%

Shoes Horse, Mule, &c.—

F. o. b., Pittsburg:
Iron.....per keg $3.85
Steel.....per keg 3.60
Burden's, all sizes, ₱ keg..... ..$3.90

Shot—

Drop, up to B, 25-lb. bag.....$1.60
Drop, B and larger, per 25-lb. bag$1.85
Buck, 25-lb. bag.....$1.85
Chilled, 25-lb. bag.....$1.85

Shovels and Spades—

Association List, Nov. 15, 1902....40%

Sieves and Sifters—

Hunter's Imitation.gro. $10.50@11.00
Buffalo Metallic Riveted, S. S. Co., ₱ gr.:

14&16	16&18	18&20
$13.20	$13.50	$14.40

National Mfg. Co.:
Victor.....per gro. $12.00
Surprise.....per gro. $11.00
No Name.....per gro. $11 00
Shaker Barler's Pat.) Flour Sifters. ₱ doz., $2.00..... 30%

Sieves, Tin Rim -

Per dozen.

Mesh.....	*1¼*	*16*	*18*	*20*
Black, full size ..	*$1.20*	*1.25*	*1.30*	*1.35*
Plated, full size .	*$1.30*	*1.35*	*1.40*	*1.45*
Black, scant....	*....*	*$6.95*	*1.00*	*1.05*

Sieves, Wooden Rim—

Nested, 10, 11 and 12 Inch.
Mesh 18, Nested, doz.....$0.90@0 95
Mesh 20, Nested, doz..... 1.00@1.05
Mesh 24, Nested, doz ..... 1.30@1.40

Sinks—

Cast Iron—

Standard list .....60@60&10%
NOTE.—*There is not entire uniformity lists used by jobbers.*

Skeins Wagon—

Cast Iron.....75@75&10%
Steel.....40@40&10%

Slates, School—

Factory Shipments.
"D" Slates.... .....40&10%
Noiseless Slates.....60&5 tens

Slaw Cutters—See *Cutters.*

Slicers, Vegetable—

Sterling No. 10, $2.00.....33⅓

Snaps, Harness—

German.....40@40&10%
Covert Mfg. Co.:
Derby.....20&5&2%
High Grade..... 45%
Jockey.....30&10%
Trojan..... 45%
Yankee..... 30&5&2%
Yankee, Roller.....30&5&2%
Covert's Saddlery Works:
Crown.....60%
German.....60%
Model.....60%
Triumph.....60%
Oneida Community Solid Swivel..... 60%
Sargent's Patent Guarded .....66⅔&10%

Snaths—

Scythe..... .....45%

Snips, Tinners'—See *Shears*

Spoons and Forks—

Silver Plated—

Good Quality..... 50&10@60&5%
Cheap..... ..60@60&10%
International Silver Co.
1847 Rogers Bros. and Rogers & Hamilton..... 40&10%
Rogers & Bro., William Rogers Eagle Brand..... 50&10%
Anchor, Rogers Brand.. .....60%
Wm. Rogers & Son..... 60&10%
Simeon L. & Geo. H. Rogers Co.:
Silver Plated Flat Ware..... 60%
No. 17 Silver Plated Ware.....60&10%

Miscellaneous—

German Silver..... 60@60&5%
Cattaraugus Cutlery Co.:
Yukon Silver..... 50%
Simeon L. & Geo. H. Rogers Co.:
German or Nickel Silver, Special list ..... 15&10%

Tinned Iron—

Teas.....per gro. 45@50c
Tables..... per gro. 90c@$1.00

Springs— Door—

Chicago (Coil)... .....40&10%
Gem (Coil)..... 20%
Reliance (Coil)..... 40&10%
Star (Coil)..... 30%
Torrey's Rod, 39 in.....₱ doz. $1.10
Victor (Coil)..... 50&10&10%

Carriage, Wagon, &c.

1¼ in. and Wider :
Black or ¼ Bright, lb.....4¾@5 c
Bright, lb. ..... 5¼@5½c
Painted Seat Springs :
1½ x 2 x 26 per pr.....50@55c
1½ x 2 x 28 per pr..... 60@65c
1½ x 3 x 28 and narrower, per pr. 80@85c

Sprinklers, Lawn—

Enterprise..... 25@20%
Philadelphia No. 1, ₱ doz. $12; No. 2, $15; No. 3, $24..... 30%

Squares—

Nickel plated.... } List Jan. 5, 1900.
Steel and Iron... } 70&10@70&10&10%
Rosewood Nail Try Square and T-Bevels .....60&10&10@70%
Iron Hdl. Try Squares and T-Bevels. 40&10@40&10&10%
Disston's Try Sq. and T-Bevels.....70%
Winterbottom's Try and Miter..... 40&10@40&10&10%

Squeezers— Lemon—

Wood, Common, gro., No. 0, $5.25 @$5.50 : No. 1. $6.25@$6.50.
Wood, Porcelain Lined.
Cheap .....doz. $1.00
Good Grade.....doz. $1.25
Tinned Iron.....doz. $0.75@1.25
Iron, Porcelain Lined.....doz. $1.75

Staples—

Barbed Blind. .....lb. 6@6½c
Electricians', Association list..... 80&10&10&10%
Fence Staples, Plain $2.25; Galvanized.....$2.55
Poultry Netting, Staples....per lb.. 2½@3½c
Grand Crossing Tack Co.'s list....80&10%

Steels, Butchers'—

Dick's..... 30%
Foster Bros'..... 30%
C. & A. Hoffmann's..... 40%

Steelyards..... .....30@30&10%

Stocks and Dies—

Blacksmiths'..... .....50@50&10%
Curtis Reversible Ratchet Die Stock. 25%
Derby Screw Plates..... 25%
Gardner Die Stocks No. 1..... 50%
Gardner Die Stocks, larger sizes..... 40%
Green River..... 25%
Lightning Screw Plate..... 25%
Little Giant..... 25%
Reece's New Screw Plates.....25@30%

Stone—

Scythe Stones—

Chicago Wheel & Mfg. Co:
Gem Corundum, 10 inch, $8.00 per gro., 12 inch, $10.80
Norton Emery Scythe Stones :
Less than gross lots.....₱ gro. $9.00
One gross or more..... ₱ gro. $7.20
Lots of 10 gross or more....₱ gro $6.00
Pike Mfg. Co. 1901 list:
Black Diamond S. S....₱ gro. $12.00
Lamoille S. ....₱ gro. $11.00
White Mountain S. S....₱ gro. $9.00
Green Mountain S. S....₱ gro. $6.00
Extra Indian Pond S. S.₱ gro. $7.50
No. 1 Indian Pond S. S..₱ gro. $7.00
No. 2 Indian Pond S. S..₱ gro. $4.50
Leader Red End S. S....₱ gro $4.50
Balance of 1901 list 33⅓%

Oil Stones, &c.

Chicago Wheel & Mfg. Co., 1901 list:
Gem Corundum Oil, Double Grit.....50%
Gem Corundum Axe, Single or Double Grit..... 55%
Gem Corundum Slips..... 55%
Gem Corundum Razor Hones..... 50%
Pike Mfg. Co. 1901 list: ₱ lb
Arkansas Stone, No. 1, 3 to 5¼ in. $2.80
Arkansas Stone, No. 1, 5½ to 8 in. $3.50
Arkansas Slips No. 1 ....$4.00
Lily White Washita 4 to 8 i n....60¢
Rosy Red Washita, 4 to 8 in .... 60¢
Washita Stone, Extra, 4 to 8 in..50¢
Washita Stone, No. 1, 4 to 8 in..40¢
Washita Stone, No. 2, 4 to 8 in..30¢
Lily White Slips..... 90¢
Rosy Red Slips..... 90¢
Washita Slips, Extra..... 80¢
Washita Slips, No. 1..... 70¢
India Oil Stones (entire list) 33⅓%
Hindostan No. 1, Regular.... ₱ lb 8¢
Hindostan No. 1 Small..... ₱ lb 10¢
Axe Stones (all kinds) .....
Turkey Oil Stones, ex. 5 to 8 in. ₱ lb 8¢
Queer Creek Stones, 4 to 8 in.....20¢
Queer Creek Slips..... 40¢
Sand Stone..... 5¢
Belgian, German and Swaty Razor Hones..... 50%
Natural Grit Carving Knife Hones, ₱ doz.....$3.00
Quick Edge Pocket Knife Hones, ₱ doz.....$3.00
Mounted Kitchen Sand Stone, ₱ doz.....$1.50

Stoners— Cherry—

Enterprise.....25@30%

Stops, Bench—

Millers Falls..... 15&10%
Morrill's...₱ doz., No. 1, $10.00.....50%
Morrill's, No. 2, $12.50..... .....50%
Whipple's Combination..... ₱ doz. $2 50

Door—

Chapin-Stephens Co.....60@60&10%

Plane—

Chapin-Stephens Co..... 2%

Straps— Box—

Cary's Universal, case lots....20&10&10%

Hame—

Covert's Saddlery Works.....60&10%

Stretchers, Carpet—

Cast Iron, Steel Points....doz. 55@60c
Socket.....doz. $1.75
Excelsior Stretcher and Tack Hammer Combined, per doz. $6..... .....20%

Stuffers, Sausage—

Enterprise Mfg. Co.....25@25&7½%
National Specialty Mfg. Co., list Jan. 1, 1902..... .....30&5%

Sweepers, Carpet—

National Sweeper Co.:	Per doz.
Auditorium, Roller Bearing (26 in case), Nickel.....	$54.00
Mammoth, Roller Bearing (30 in case), Nickel.....	$60.00
Marion, Roller Bearing, regular finishes, full Nickel.....	$24.00
Marion Queen, Roller Bearing, full Nickel.....	$24.00
Monarch, Roller Bearing, Nickel..	$22.00
Monarch, Roller Bearing, Jap'ned.	$20.00
Transparent, Roller Bearing, Plate Glass Top, Nickel.....	$36.00
Monarch Extra, Roller Bearing, (17-inch case), Nickel.....	$36.00
Monarch Extra, Roller Bearing (17-inch case), Japanned.....	$33.00
National Queen, Fancy Veneers..	$27.00
Perpetual, Regular Bearings, Nkl.	$20.00
Perpetual, Regular Bearings, Jap.	$18.00

NOTE.—*Rebates: 30c per dozen on three-dozen lots; $1 per dozen on five-dozen lots ; $2 per dozen on ten-dozen lots; $2.50 per dozen on twenty-five-dozen lots.*

Tacks, Brads, &c.—

List Jan. 15, '99.
Carpet Tacks..... 90¢&10¢@10¢....%
American Cut Tacks....90¢&25@....%
Swedes Iron Tacks.90¢&30¢10¢&5@....%
Swedes Upholsterers' Tacks..... 90¢&45¢10¢&5@....%
Gimp Tacks.....90¢&45¢&10@....%
Lace Tacks.....90¢&45¢10¢@....%
Trimmers' Tacks..90¢&30¢10¢&5@....%
Looking Glass Tacks..70¢10¢&5@....%
Bill Posters' and Railroad Tacks... 90¢&45¢&10....%
Hungarian Nails ....80¢&30¢&5@....%
Common and Patent Brads..... 80¢&10¢&5@....%
Trunk and Clout Nails..80¢&10@....%

NOTE.—*The above prices are for Straight Weights.* An extra 5% is given Star Weights** and an extra 10¢ ℔ on Standard Weights.****

Miscellaneous—

Double Pointed Tacks.30 &6 tens & 5%
Steel Wire Brads, R. & E. Mfg. Co 's list.. 50&10&6%

See also *Nails, Wire.*

Tanks, Oil—

	Each.
Emerald, S. S. & Co.....30-gal	$3.25
Emerald, S. S. & Co.....60-gal.	$4.00
Queen City S. S. & Co., 85-gal.....	$3.85
Queen City S. S. & Co., 60-gal.....	$4.50

Tapes, Measuring—

American Asses' Skin.....40&10@50%
Patent Leather.....25@35&5%
Steel..... .....40@40&10%
Chesterman's.....25@25&5%
Eddy Asses' Skin.....40&10&5%
Eddy Patent Leather.....25@30&5%
Eddy Steel.....40@40&10%
Keuffel & Esser Co., Steel and Metallic, Lower list, 1899..... .....35%
Lufkin's Steel.....33⅓@35%
Lufkin's Metallic..... ..30@30&5%

Teeth, Harrow—

Steel Harrow Teeth, plain or headed, ⅝ inch and larger per 100 lbs..$3.00

Thermometers—

Tin Case.....80¢&10@80¢10¢&5%

Ties, Bale—Steel Wire.

Single Loop ....80¢&2½
Monitor, Cross Head, Etc.....70%

Brick Ties—

Niagara Brick Ties..... .....30&10%

Tinners' Shears, &c.—

See *Shears, Tinners', &c.*

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tips, Safety Pole—

Covert's Saddlery Works.....60&10%

Tire Benders, Upsetters, &c.—See *Benders and Upsetters, Tire.*

Tools—Coopers'—
L. & I. J. White ..... 20@20&5%

Hay—
Myers' Hay Tools 50%
Stowell's Hay Carriers 50%
Stowell's Hay Forks 50%
Stowell's Fork Pulleys 50%

Saw—
Atkins' Cross Cut Saw Tools 40%
Simonds' Improved 33⅓%
Simonds' Crescent 25%

Ship—
L. & I. J. White 25%

Transom Lifters—
See *Lifters, Transom.*

Traps—Fly—
Balloon, Globe or Acme ..... doz. $1.15@1.25; gro. $11.50@12.00
Harper, Champion or Paragon ..... doz. $1.25@1.40; gro. $13.00@13 50

Game—
Oneida Pattern ..... 75&10@75&10&5%
Newhouse ..... 45@45&5%
Hawley & Norton ..... 65@65&5%
Victor (Oneida Pattern) ..... 75@75&5%
O.C. Jump (Blake Pattern) 60&5@60&10%

Mouse and Rat—
Mouse, Wood, Choker, doz. holes ..... 8½@9c
Mouse, Round or Square Wire ..... doz. 85@90c
Marty French Rat and Mouse Traps (Genuine):
No. 1, Rat, Each $1.12½; ₱ doz. $12.00
No. 3, Rat, ₱ doz. $6.00; case of 50 $5.25 doz.
No. 3½, Rat, ₱ doz. $4.75; case of 72 $4.25doz.
No. 4, Mouse, ₱ doz. $3.50; case of 7 $3.75 doz.
No. 5, Mouse, ₱ doz. $2.75; case of 150 $2.25
Schuyler's Rat Killer, No. 1, ₱ gr. $30.00
No. 2, ₱ gr. $30.00; Mouse, No. 3, $18.00 ..... 50%
J. M Mast Mfg. Co.: Per gro.

	Mouse.	Rat.
Blizzard	No. 12, $3.00	No. 1, $9 50
Old Nick	No. 30, 2.22	No. 2, 8.40
Joker	No. 5, 2.10	No. 3, 8.40

Imp'd Snap Shot, Mouse, per gro., 2 hole, $2.40.
Imp'd Snap Shot, Mouse, per gro., 4 hole, $4.20.

Trimmers. Spoke—
Bonney's Nos. 1 and 2 ..... 33⅓%
Wood's E 1 ..... 50%

Trowels—
Disston Brick and Pointing 30%
Disston Plastering 25%
Disston "Standard Brand" and Garden Trowels 35%
Kohler's Steel Garden Trowels, 3 in. ₱ gro. $5.00
Kohler's Steel Garden Trowels, 6 in. ₱ gro. $6.00
Never-Break Steel Garden Trowels ..... gro. $6.00
Rose Brick and Plastering ..... 25&5%
Woodrough & McFarlin, Plastering 25%

Trucks, Warehouse, &c.—
R. & L. Block Co.:
New York Pattern ..... 50&10%
Western Pattern ..... 60&10%
Handy Trucks ..... per doz. $16.00
Grocery ..... per doz. $15.00
Daisy Stove Trucks, Improved pattern ₱ doz. $18.50
Model Stove Trucks ..... ₱ doz. $18.50

Tubs, Wash—

	No. 1	2	3
Galvanized, per doz.	$5.00	5.50	6.25

Galvanized Wash Tubs (S. S. & Co.):

	No. 1	2	3	10	20	30
Per doz., net	$5.70	6.50	7.20	6.30	7 20	8.10

Twine—Miscellaneous—

Flax Twine—	BC	B.
No. 9, ¼ and ½-lb. Balls	..23c@24c	
No. 12, ¼ and ½ lb. balls	..18c@20c	
No. 18, ¼ and ½-lb. Balls	..16c@18c	
No. 24, ¼ and ½-lb. Balls	..16c@18c	
No. 36, ¼ and ½-lb. Balls	..15c@17c	

Chalk Line, Cotton, ½-lb Balls 9c

Cotton Mops, 6, 9, 12 and 15 lb. to doz ..... 10@12c
Cotton Wrapping 5 Balls to lb ... according to quality ..... 16c@25c
American 2-Ply Hemp, ¼ and ½-lb. Balls ..... 13@14c
American 3 Ply Hemp, 1-lb. Balls ..... 13@14c
India 2-Ply Hemp, ¼ and ½-lb. Balls (Spring Twine) 9c
India 2-Ply Hemp, 1-lb. Balls 9c
India 3-Ply Hemp, 1¼-lb. Balls 8c
2, 3, 4 and 5-Ply Jute, ½-lb. Balls ..... 9@10c
Mason Line, Linen, ½-lb. Balls 46c
No. 26½ Mattress, ¼ and ½-lb Balls 37c
Wool, 3 to 6 ply ..... 5¾@6c

Vises—
Solid Box ..... 50&10@60%

Parallel—
Athol Machine Co.:
Simpson's Adjustable 40%
Standard 40%
Amateur 25%
Bonney's 33⅓%
Columbian Hdw. Co 40%
Emmert Universal:
Pattern Makers' No. 1 ..... $15.00
Pattern Makers' No 2 ..... $12.50
Machinist and Tool Makers' No. 4 $12.50
Fisher & Norris Double Screw ..... 15&10%
Hollands':
Machinists' ..... 40@40&5%
Key-tone ..... 65&5@70%
Lewis Tool Co ..... 30@30%
Merrill's 30%
Miller's Falls ..... 60&10%
Massey Vise Co.:
Clincher 40%
Perfect 20%
Lightning Grip 20%
Parker's:
Victor ..... 20@25%
Regulars ..... 20@25%
Vulcan's ..... 40@45%
Combination Pipe ..... 55@60%
Prentiss ..... 20@25%
Sargent's 40%
Smith & Hemenway Co.:
Machinists 40%
Jewelers 33⅓%
Snediker's X. L. 33⅓%
Stephens' 33⅓%

Saw Filers'—
Bonney's, No. 1, $13; No. 3, $16 ..... 40%
Disston's D 3 Clamp and Guide, ₱ doz $30 ..... 25%
Perfection Saw Clamps, ₱ doz. $3 00
Reading 60%
Wentworth's Rubber Jaw, Nos. 1, 2 and 3 ..... 45&50%

Wood Workers'—
Massey Vise Co.:
Lightning Grip 15%
Perfect 15%
Wyman & Gordon's Quick Action, 6 in., $6.00; 9 in., $7.00; 14 in., $8.00.

Miscellaneous—
Bignall & Keeler Combination Pipe Vise 60%
Hollands' Combination Pipe ..... 60@60&5%
Massey's Quick Action Pipe 40%
Parker's Combination Pipe:
87 Series 60%
187 Series ..... 60&5%
No. 870 ..... 40%

Wads—Price Per M.

B. E., 11 up	.....	60c
B. E., 9 and 10	.....	70c
B. E., 8	.....	80c
B. E., 7	.....	80c
P. E., 11 up	.....	$1.00
P. E., 9 and 10	.....	1.25
P. E., 8	.....	1.50
P. E., 7	.....	1.50
Ely's B. E., 11 and larger	.....	$1.70@1.75
Ely's P. E., 12 to 20	.....	$3.00@3.25

Dis. 15%

Ware, Hollow—Cast Iron, Hollow—
Stove Hollow Ware:
Enameled ..... 55&10@60%
Ground ..... 60&10@65%
Plain or Unground ..... 65&10@70%
Country Hollowware per 100 lbs., $2 50
White Enameled Ware:
Maslin Kettles 70%
Covered Ware:
Tinned and Turned 40%
Enameled 50%
See also *Pots Glue.*

Enameled—
Agate Nickel Steel Ware ..... 50&20
Agate Nickel Steel Ware, Specials ..... 60&15%
Iron Clad Ware ..... 70&10%
Lava, Enameled ..... 40&10%
Never Break Enameled 50%

Tea Kettles—
Galvanized Tea Kettles:

Inch	6	7	8	9
Each	45c	50c	55c	65c

Steel Hollow Ware.
Avery Spiders & Griddles ..... 65&65&5%
Avery Kettles 60%
Porcelained ..... 50&5&50&10%
Never Break Spiders and Griddles ..... 65&5%
Never Break Kettles 60%
Solid Steel Spiders & Griddles ..... 65&5%
Solid Steel Kettles 60%

Warmers, Foot—
Pike Mfg. Co., Shawstone ..... 40@40&10%

Washboards—
Solid Zinc: ₱ doz
Crescent, family size, bent frame $3.00
Red Star, family size, stationary protector $3.00
Double Zinc Surface:
Saginaw Globe, family size, stationary protector $2.65
Cable Cross, family size, stationary protector $2.90
Single Zinc Surface:
Naiad, familysize, open back perforated $2.40
Saginaw Globe, protector, family size, ventilated back $2.95
Brass Surface:
Brass King, Single Surface, open back $3.00
Nickel Plate Surface:
No. 1001 Nickel Plate, Single Surface $3.00

Washers—Leather, Axle—
Solid ..... 80c10@80c10c10%
Patent ..... 90c@90c&5%
Coil:

¾	1	1¼	1½ Inch,
11c	12c	13c	15c per box

Iron or Steel—
Size bolt .... 5-16 ⅜ ½ ⅝ ¾
Washers $5.10 4.20 2.90 2.70 2.50
In lots less than one keg add ½c per lb., 5-lb. boxes add ½c to list.

Cast Washers—
Over ½ inch. barrel lots, per lb 1¼@2c

Waterers, Hog—
Improved Dewey, ₱ doz $13.00

Wedges—
Oil Finish ..... lb. 2.35@2.40c

Weights

Hitching—
Covert Mfg. Co ..... 40&2%
Covert's Saddlery Works ..... 60&10%

Sash—
Per ton, f.o.b. factory:
Eastern District $23.00
Western, Central and Southern Districts market unsettled, prices ranging from $21.00@25.00

Wheels, Well—
8-in., $1.60@1.80; 10-in., $2.00@2.25; 12-in., $2.45@2.65; 14-in., $4.00@4.25

Wire and Wire Goods—
Bright and Annealed:

6 to 9	.....	75@75&10%
10 to 18	.....	75c&5@75c10c&5%
19 to 26	.....	75c10c&10@80c&5%
27 to 36	.....	75c10c&7½@80c&2½%

Galvanized:

6 to 9	.....	70c&5@70c&10%
10 to 18	.....	70c&5@70c&10%
19 to 26	.....	72½&@72½&5%
27 to 36	.....	70@70c&5%

Coppered:

6 to 9	.....	70c&5@70c&10%
10 to 18	.....	70c&10@70c10c&5%
19 to 26	.....	72½c&10@75%
27 to 36	.....	70@70c&5%

Tinned:

6 to 14	.....	72½c&10@75%
15 to 18	.....	70&10@70c10c&5%
19 to 26	.....	65c&10c10@70%
27 to 36	.....	60@60c&10%

Annealed, Steel and Tinned, on Spools ..... 70@70c&10%
Brass & Copper on Spools 60@60c&10%
Brass, list Feb. 26, '96 ..... 30%
Copper, list Feb. 26, '96 ..... 15%
Cast Steel Wire 50%
Wire Clothes Line, see *Lines.*
Wire Picture Cord, see *Cord.*

Bright Wire Goods—
List June 24, 1903 ... 90c10c&10@ ... %

Wire Cloth and Netting—
Galvanized Wire Netting ..... 80c10@80c10c&5%
Painted Screen Cloth, per 100 ft. $1.25
Standard Galv. Hardware Grade:
Nos. 2, 2½ and 3 Mesh, sq. ft. 2c
Nos. 4 and 5 Mesh, sq. ft. 3½c
No. 6 Mesh, sq ft 3½c
No. 8 Mesh, sq ft 4c

Wire Barb—See Trade Report.

Wrenches—
Agricultural ..... 80c&5@80c10c&5%
Baxter Pat'rn S Wrenches ..... 70c&5@70c10%
Drop Forged S ..... 55@55c&5%
Acme ..... 60&10%
Alligator 70%
Alligator Pattern 70%
Bull Dog 70%
Bemis & Call's:
Adjustable S ..... 35&5%
Adjustable S Pipe 40%
Brigg's Pattern ..... 30&10%
Combination Black ..... 40&5%
Combination Bright 40%
Merrick's Pattern 50%
No. 3 Pipe, Bright 55%
Boardman's 33⅓%
Coes' Genuine Knife Hdl ..... 40&10&5&5%
Coes' Genuine Steel Hdl ..... 40&10&5&5%
Coes' Genuine Key Model ..... 40&10&5&5%
Coes' "Mechanics' ..... 40&10&10&5&5%
Donohue's Engineer ..... 40&10%
Dudly Combination ..... 50&10&5%
Dudly Pipe ..... 50&10&5%
Dudly Adjustable Pipe ..... 40&10&5%
Eagle ..... 50&10%
Elgin Wrenches 40%
Elgin Monkey Wrench Pipe Jaws 33⅓%
Gem Pocket 30%
Hercules 70%
W. & B. Machinist:
Case lots ..... 50&5%
Less than case lots 50%
Improved Pipe (W & B.) 60%
Solid Handles, P.S. & W ..... 50@50&5%
Stillson 65%
Triumph ..... 60&10%
Vulcan Chain 50%

Fruit Jar—
T & B Fruit Jar Wrenches ..... ₱ gro $9.00
Triumph Fruit Can Wrenches, ₱ gro $9.60
Triumph Fruit Jar Holders ..... ₱ gro. $15.00

Wrought Goods—
Staples, Hooks, &c., list March 17 '92 ..... 90@90c&5%

Yokes, Neck—
Covert Saddlery Works, Trimmed 70%
Covert Saddlery Works, Neck Yoke Centers 70%

Yokes, Ox, and Ox Bows—
Fort Madison's Farmers & Freighters' ..... list nat

Zinc—
Sheet ..... per 100 lbs. $6 35@6.60

PAINTS, OILS AND COLORS.

White Lead, Zinc, &c.
Lead, English white, in Oil ..... 9¼@ 9¼
Lead, American White, in Oil:
Lots of 500 ℔ or over ..... @ 6½
Lots less than 500 ℔ ..... @ 7
In Barrels ..... @ 6
Lead, White, in oil, 25 ℔ tin pails, add to keg price ..... @ ¼
Lead, White, in oil, 12½ ℔ tin pails, add to keg price ..... @ 1
Lead, White, in oil, 1 to 5 ℔ assorted tins, add to keg price ..... @ 1¼
Lead, American, Terms: For lots 12 tons and over ¼c rebate; and 2% for cash if paid in 15 days from date of invoice; for lots of 500 lbs. and over 2% for cash if paid in 15 days from date of invoice; for lots of less than 500 lbs. net.
Lead White, Dry in bbls ..... @ 6
Zinc, American, dry ..... ₱ ℔ 4½@ 4¾
Zinc, Paris, Red Seal, dry ..... @ 8¾
Zinc, Paris, Green Seal, dry ..... @ 9¼
Zinc, Antwerp Red Seal, dry ..... @ 6¾
Zinc, Antwerp, Green seal, dry ..... @ 8¼
Zinc, V. M. French, in Poppy Oil, Green Seal:
Lots of 1 ton and over ..... 12 @12½
Lots of less than 1 ton ..... 12¼@12¾
Zinc, V. M French, in Poppy Oil, Red Seal:
Lots of 1 ton and over ..... 10¾@11¼
Lots of less than 1 ton ..... 11@11½
DISCOUNTS.—V. M. French Zinc.—Discounts to buyers of 10 bbl. lots of one or assorted grades, 1%; 25 bbls., 2%; 50 bbls., 4%.

Dry Colors.
Black, Carbon ..... ₱ ℔ 5 @10
Black, Drop, Amer ..... 4 @ 6
Black, Drop, Eng ..... 5 @15
Black, Ivory ..... 16 @20
Lamp, Com ..... 4½@ 6
Blue, Celestial ..... ₱ ℔ 4 @ 6
Blue, Chinese ..... 29 @32
Blue, Prussian ..... 27 @30
Blue, Ultramarine ..... 4½@15
Brown, Spanish ..... ½@ 1
Carmine, No. 40 ..... ₱ ℔ $3.75@4.00
Green, Chrome, ordinary ..... 3½@ 6
Green, Chrome, pure ..... 17 @25
Lead, Red, bbls. ½ bbls. and kegs:
Lots 500 ℔ or over ..... @ 6½
Lots less than 500 ℔ ..... @ 7
Litharge, bbls. ½ bbls. and kegs:
Lots 500 ℔ or over ..... @ 6½
Lots less than 500 ℔ ..... @ 7
Ocher, American ..... ₱ ton $8.50@14.00
Ocher, American Golden ..... 2 @ 3
Ocher, French ..... 1½@ 2½
Ocher, Foreign Golden ..... 3 @ 4
Orange Mineral, English ..... ₱ ℔ 9 @11
Orange Mineral, French ..... 10½@11¼
Orange Mineral, German ..... 6¾@ 9
Orange Mineral, American ..... 8 @ 8½
Red, Indian, English ..... 4½@ 8½
Red, Indian, American ..... 3 @ 3½
Red, Turkey, English ..... 4 @ 6
Red, Tuscan, English ..... 7 @10
Red, Venetian, Amer. ..... ₱ 100 ℔ .80@1.50
Red Venetian, English ..... ₱ 100 ℔ 1.25@1 75
Sienna, Italian, Burnt and Powdered ..... ₱ ℔ 3 @ 6½
Sienna, Ital., Raw, Powd ..... 3 @ 6½
Sienna, American, Raw ..... 1½@ 2
Sienna, American, Burnt and Powdered ..... ₱ ℔ 1½@ 2
Talc, French ..... ₱ ℔ 1 @ 1½
Talc, American ..... 75 @1.25
Terra Alba, French, ₱ 100 ℔ .95 @1.00
Terra Alba, English ..... 95 @1.00
Terra Alba, American No. 1 ..... 75 @85
Terra Alba, American No. 2 ..... 50 @60
Umber, Turkey, Bnt. & Pow. ₱ ℔ 2½@ 3½
Umber, Turkey, Raw & Powd. 2½@ 3½
Umber, Bnt. Amer ..... 1½@ 2
Umber, Raw, Amer ..... 1½@ 2
Yellow, Chrome ..... 11 @14
Vermilion, American Lead ..... 10 @25
Vermilion, Quicksilver, bulk ..... @70
Vermilion, Quicksilver, bags ..... @71
Vermilion, English, Import ..... 80 @85
Vermilion, Chinese ..... @0.90@1.00

Colors in Oil.
Black, Lampblack ..... 12 @14
Blue, Chinese ..... 36 @46
Blue, Prussian ..... 32 @36
Blue, Ultramarine ..... 13 @16
Brown, Vandyke ..... 11 @14
Green, Chrome ..... 10 @15
Green, Paris ..... @24
Sienna, Raw ..... 12 @15
Sienna, Burnt ..... 12 @15
Umber, Raw ..... 11 @14
Umber, Burnt ..... 11 @14

Miscellaneous.
Barytes, White Foreign, ₱ ton $17.50@20.00
Barytes Amer. floated ..... 18.50@20.00
Barytes, Crude, No. 1 ..... 10.00@11.00
Chalk, in bulk ..... ₱ ton 3.00@ 3.25
Chalk, in bbls ..... ₱ 100 ℔ @ 35
China Clay, English ..... ₱ ton 11.00@17.00
Cobalt, Oxide ..... ₱ 100 ℔ 2.50@ ...
Whiting, Common ..... ₱ 100 ℔ .45@ .48
Whiting, Gliders ..... .55@ .57
Whiting, extra Gliders' ..... .58@ .60

Putty.
In bladders ..... 1¾@2¼
In bulk ..... 1¼@2
In cans 1 ℔ to 5 ℔ ..... 2¼@4½
In cans 12½ ℔ to 25 ℔ ..... 1¾@2¼

Spirits Turpentine.
In Oil bbls ..... 58 @58½
In machine bbls ..... 58½@59

Glue.
Cabinet ..... ₱ ℔ 11 @15
Common Bone ..... 6 @ 8
Extra White ..... 18 @24
Foot Stock, White ..... 11 @14
Foot stock, Brown ..... 7 @10
German Hides ..... 12 @18
French ..... 10 @40
Irish ..... 13 @16
Low Grade ..... 8 @11
Medium White ..... 14 @17

Gum Shellac— Cts. per lb.
Bleached, Commercial ..... 49 @
Button ..... 50 @50
Diamond I ..... 60 @
Fine Orange ..... 53 @57
A. C. Garnet ..... 47 @48
D. C ..... 95 @
T. N ..... 51 @53
V. S. O ..... 63 @65

Animal, Fish and Vegetable Oils.
Linseed, City, raw ..... ₱ gal. 42 @43
Linseed, City, boiled ..... 44 @45
Linseed, State and West'n, raw 39 @40
Linseed, raw Calcutta seed ..... @65
Lard, Prime, Winter ..... 58 @59
Lard, Extra No. 1 ..... 50 @52
Lard, No. 2 ..... 37 @40
Cotton-seed, Crude, f.o.b mills 27 @28
Cotton-seed, Summer Yellow, prime ..... 34 @35
Cotton-seed, Summer Yellow, off grades ..... 33¼@34
Sperm, Crude ..... @55
Sperm, Natural Spring ..... 60 @62
Sperm, Bleached Spring ..... 62 @63
Sperm, Natural Winter ..... 63 @65
Sperm, Bleached Winter ..... 65 @67
Tallow, Prime ..... 48 @49
Whale, Crude ..... @ ...
Whale, Natural Winter ..... 46 @47
Whale Bleached Winter ..... 48 @40
Menhaden, Brown, Strain'd .. 31 @32
Menhaden, Light Strained ..... 32 @33
Menhaden, Bleached Winter .. 34 @35
Menhaden, Ex Bleached Winter 36 @37
Cocoanut, Ceylon ..... @ 6¾
Cocoanut, Cochin ..... 6½@ 7
Cod, Domestic ..... 39 @40
Cod, Newfoundland ..... 40 @41
Red Elaine ..... 44 @45
Red Saponified ..... ₱ ℔ 4½@ 4¾
Olive, Italian, bbls ..... 51 @ 55
Neatsfoot prime ..... 54 @ ...
Palm, prime, Lagos ..... ₱ ℔ 6¾@ 6½

Mineral Oils.
Black, 20 gravity, 25@30 cold test ..... ₱ gal. 13 @14
Black, 29 gravity, 15cold test. 14 @15
Black, Summer ..... 13 @14
Cylinder, light filtered ..... 20½@21½
Cylinder, dark filtered ..... 18½@19½
Paraffine, 903-907 gravity ..... 15 @15½
Paraffine, 903 gravity ..... 14 @14½
Paraffine, 885 gravity ..... 11¾@12½
Paraffine, red ..... 14 @15½
In small lots ½¢ advance.